DR. HESS

Stock Book

A Scientific Treatise on Horses, Cattle, Sheep, Hogs and Poultry

Published by

DR. HESS & CLARK

Ashland, Ohio

This book is fully protected by Copyright, and all imitations or infringements will be prosecuted to the full extent of the law.

Copyright 1901 by Dr. Hess & Clark.

SHOUT
SHARE
IT

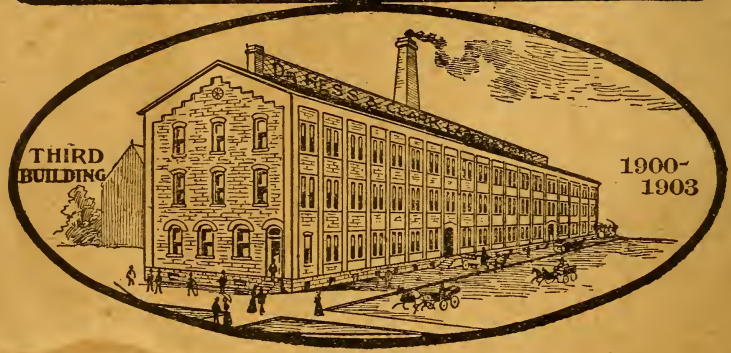
Our Growth

OLD FRAME

1894 ~ 1897.

SECOND BUILDING

1897 ~ 1900.

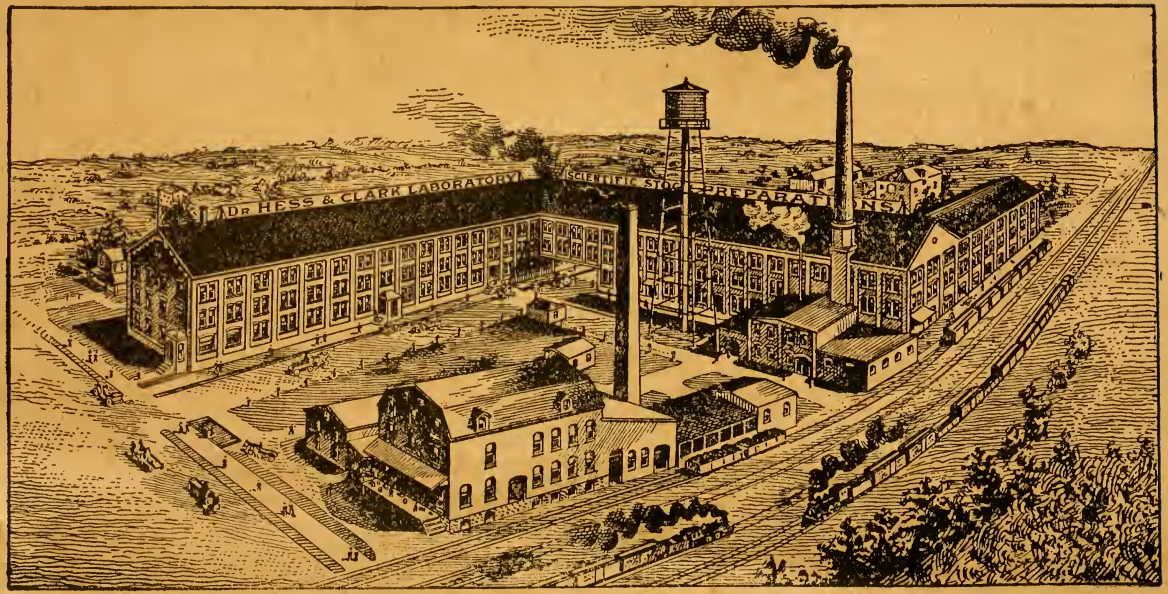


THIRD BUILDING

1900~ 1903

Two Acres of Floor Space. Employs 250 People.

Operates its own Electric Plant for Transmission of Light and Power.



THE LARGEST STOCK FOOD FACTORY IN THE WORLD,

AS IT APPEARS TO-DAY.

OUR SUCCESS

The two preceding pages illustrate our past and present facilities from a manufacturing point of view.

Since 1894 we have built up the largest business of its kind in the world.

From the little frame building, which Dr. Hess used as his office and hospital, in the practice of veterinary medicine to the immense three-story brick structure with over two acres of floor space, employing 250 people and operated by a 200 horse Corliss engine, with complete electric equipment for the transmission of light and power, this business has developed.

This astonishing record in so short a time is evidence of the most sterling character, of the merit of Dr. Hess Preparations.

And yet it is not remarkable either that such a prestige should be created when we consider the origin of the formulæ for Dr. Hess Stock Food, Poultry Pan-a-ce-a, Dr. Hess Dip and Disinfectant, Instant Louse Killer, Dr. Hess Healing Powder, Dr. Hess Worm Powder and Dr. Hess Heave Powder.

DR. HESS (M. D., D. V. S.),

who formulated the above preparations is a regular graduate of medicine and also veterinary surgery, as shown in the affidavit on the second page of this book.

He practiced both branches of the medical profession for many years before the compounds that bear his name were placed upon the market, and it was the success of these prescriptions in his regular practice that finally induced him to put them on the market for sale generally.

We believe that human nature or instinct would lead almost anyone to prefer stock preparations formulated by a graduate of medical colleges and an authorized veterinarian, to those manufactured by persons who are uneducated in the science of medicine or the requirements of the animal system.

To this more than any other reason do we attribute the great confidence which the stock raising public has exhibited in regard to our preparations.

After years of experimenting, adding improvement after improvement as science discovered new ingredients, and subjecting the compounds to the most severe tests, before stock and poultry associations in the United States and Canada, and finding them thoroughly effective for every condition for which

they were intended, it was decided to place them on the market on a

WRITTEN GUARANTEE.

Dr. Hess Stock Food, Poultry Pan-a-ce-a, Instant Louse Killer, Dr. Hess Dip and Disinfectant, Dr. Hess Healing Powder, Dr. Hess Worm Powder and Dr. Hess Heave Powder are, therefore, sold on a positive guarantee, and we have so completely demonstrated the absolute merit of these compounds, that we are able to furnish this written guarantee, indorsed by banks, commercial agencies, and well known business houses, who vouch for the fulfillment of its conditions.

OUR INFORMATION BUREAU.

For all diseases and conditions for which Dr. Hess Preparations are not recommended, we enclose a little yellow card in every package which entitles the holder to a letter of advice and a special prescription from Dr. Hess (M. D., D. V. S.) free of charge.

In this manner we furnish a universal treatment for all stock difficulties either in the preparations themselves or in the special prescription to which the little yellow card entitles you.

We adopted this plan in order that we might guarantee Dr. Hess Preparations for exactly what they really will do, and, at the same time supply our patrons with something to meet every condition known to domestic animals.

OUR PRICE.

It has been our policy from the very beginning to offer our goods for sale at a very low price, admitting of an exceptionally small margin and depending upon the volume of our sales for our profit.

We believed at the start that our goods would command a wonderful advantage over those made by unprofessional manufacturers; we were also satisfied of the public appreciation of our Information Bureau, but we were determined to make our proposition beyond the possibility of any one meeting it in any particular.

Therefore, we offer our goods from 50 to 75 per cent. lower than any concern in existence, size of dose and merit considered. We could not, however, make them better if we were to get ten times our price.

That we have succeeded in our aims the illustrations on the preceding pages are evidences.

The elements, therefore, to which we are indebted for our prosperity and which have determined our future, are, the merit of our goods; their origin; the price; our Information Bureau; and the written guarantee.

Our success has resulted in not only a large crop of imitators but has forced all manufacturers in the same line to adopt our methods to a greater or less extent. In so doing many of them strive to justify their use of the word "scientific."

Some of the more unscrupulous competitors attempt to deceive the user in every possible way. Some even name their goods after the town which our preparations have made famous.

The very fact that competitors are willing to trade on the merits of our goods instead of their own, ought to mean a great deal to you.

The superior merits of our compounds, the large packages and their small cost have led competitors to ignore these points and talk about the size of the dose. They claim that their dose is smaller. This is false. Besides most stock foods are fed three times a day. Dr. Hess Stock Food, at full dose, is fed but twice a day. Consider the price per pound with the dose and you will find our goods the cheapest by one-half.

Peddlers traveling through the country agitate this question of dose. Farmers, stock raisers and others should not accept their irresponsible word. They should learn exactly how much other measures contain. Then compare with our standard of measure, which is a tablespoon, bearing in mind that the average dose is two tablespoonfuls only twice a day. This test will effectively silence all false claims as to the size of the dose.

From the very first we made the best goods we knew how to make. Stockmen appreciated their true value and became liberal purchasers. Their appreciation made it possible for us to grow and develop; made it possible for us to have the most perfect laboratory and factory facilities that now exist. The sincerest reward that we can now offer is the best compounds that science, brains, money and machinery can produce.

PREFATORY REMARKS

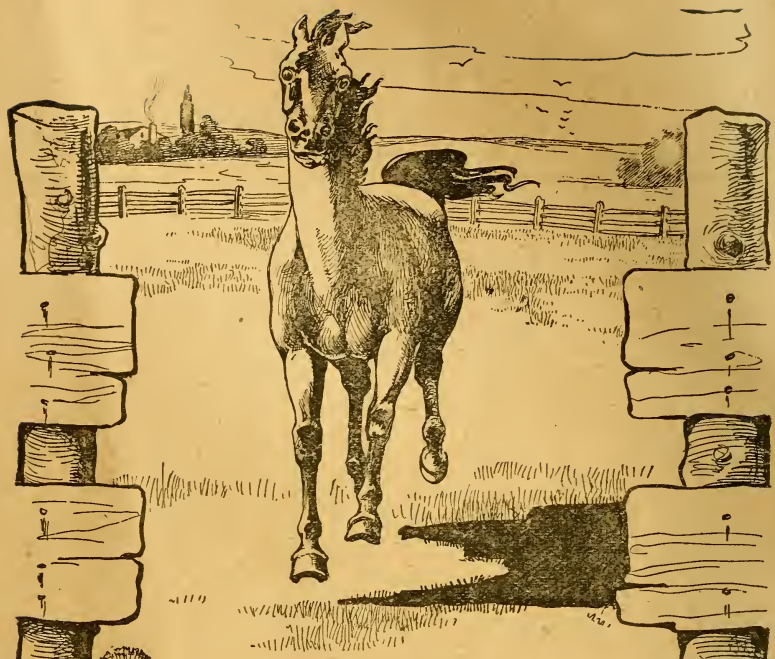
This is a practical book for all farmers, horsemen, dairymen and poultrymen.

While a strictly scientific medical work, it presents in a plain sensible way desirable and necessary information about stock, and the diseases that afflict them.

The man who conducts a large stock farm, or the man who owns simply a horse, a couple of cows, a pig and some chickens will find this treatise of inestimable value. By studying the following pages and following out the suggestions and hints any owner of stock will be able to successfully treat his animals in all ordinary cases of sickness. Having a thorough understanding of animal diseases he will readily appreciate that his stock should be kept in the best possible condition. This book tells how to do it, how to raise fat, strong, healthy, well-conditioned animals.

The following descriptions, symptoms, remedies, treatments, etc., have been carefully prepared by our Dr. Hess. These various facts have not been taken from other books or indiscriminate and probably unreliable sources but are the results of personal experiences and scientific investigations conducted along thoughtful, modern progressive lines. This record of scientific research is the latest publication of facts that you can possibly secure. No matter what price you offer to pay you cannot find any work of this nature more up-to-date.

As previously stated with this book you can doctor your stock for all ordinary complaints. If complicated cases arise with which you are unable to cope or which you do not understand we offer you the advantages of our free information bureau. In each package of our goods is a card which entitles you to free advice from Dr. Hess. You have the opportunity, in fact you are urged to make use of this bureau of advice. Do not hesitate to write fully the symptoms of the disease or the details of the injury. Such letters should be addressed to Dr. Hess & Clark in care of Information Bureau. Our Dr. Hess is a regularly licensed Doctor of Medicine and a Veterinary Surgeon. By a thorough training and a ripe experience he is fully competent to successfully treat sick and ailing stock. His advice will be beyond question worth a great deal to you.



HORSES

How to Keep Them

How to Treat Them

Food.

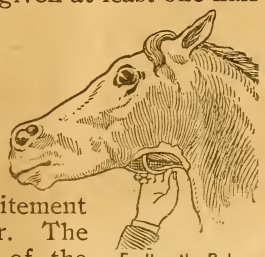
The food for a horse should always be clean and free from smut, mould or dust. The ration of grain should not be confined to a single article, such as corn or oats. The best results are obtained from giving a variety of grain, such as oats, corn, wheatbran and middlings, with occasionally flaxseed meal. Wheat does not form a desirable food for the horse, as it is apt to form dough and is quite difficult to digest. Green, improperly cured grains are extremely

apt to cause digestive disorders and should not be fed, especially in great quantities. If such foods are desired, the amount given at first should be very small and to each feed should be added a small amount of salt. The quantity, however, of this kind of food can be gradually increased after the animal becomes somewhat used to it. The food of the horse should not be too concentrated, as bulky materials are necessary to perfect digestion.

Hay—The hay should be well cured and sweet. If hay is given before it is perfectly cured, it is very apt to cause colic. Timothy hay is most desirable for horses that are required for rapid work. It is less apt to cause irregularities of the bowels and gives better staying qualities. Clover or mixed hay is most desirable as a flesh producer. It is very nutritious, and is greatly relished by most horses. The amount of hay required, under ordinary circumstances, ranges from ten to twenty pounds per day. The greatest quantity should be given in the evening. Too much hay frequently causes heaves.

Water—Water for the horse should be cool and fresh. Stagnant water often causes derangements of the stomach and diarrhœa. It should be given often and not too great a quantity at a time. The water drunk by a horse passes rapidly through the stomach and small intestines to the large colon, and for this reason it is always important to give water before feeding, so that the food will not be carried undigested from the stomach to the bowels. Horses should not be allowed water taken from shallow pools near the barnyard, as the eggs of numerous parasites frequently are washed into such pools by dashing rains and when drunk develop numerous intestinal parasites. Water should not be given in great quantities while the horse is heated. However, a few swallows can be given while the horse is warm without any danger and to the evident satisfaction of the animal. During fevers fresh water should be kept in reach of the animal at all times. By so doing he will never drink more than a few swallows at a time. Water should be given at least one-half hour before the feed of grain is allowed.

Pulse.



Feeling the Pulse.

The pulse is the throbbing of the arteries caused by the blood expelled by the heart. The normal pulse when the horse is at rest is from 30 to 40 per minute. During severe exertion, excitement and fevers the pulse runs much higher. The pulse can most readily be felt in front of the angle and at the lower border of the jaw bone, where it will appear as a round, pulsating cord. It can also be detected near

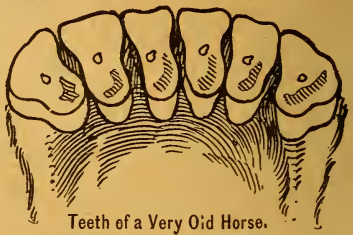
the middle of the under surface of the tail. The character and frequency of the pulse is an excellent indicator of the condition of the animal, especially in diseases.

Temperature.

The normal temperature of the horse may be stated to be 101° Fahrenheit, although a variation of one degree is frequently found. The temperature runs somewhat lower in old animals. If the temperature is found by the thermometer to register 103° to 105° F. it indicates a morbid condition existing somewhere.

Teeth.

Teeth at Seven Years.



Teeth of a Very Old Horse.

Teeth at Ten Years.

Natural Cup. Artifical Cup.

(b) Cross Sections of Tooth Showing Wear.

The full number of teeth in the horse is forty, and thirty-six in the mare, the tusks being absent or only slightly developed in the female. The first twelve molars (three on either side of each jaw) drop off before the animal reaches five years. The caps or crowns of teeth frequently cause trouble in eating in young animals, and should be removed. This can be done in most cases by an ordinary pair of forceps. In older horses the molars sometimes become uneven, sharp or decayed. The animal shows this by holding the head to one side while eating, quidding the hay, frothing and slavering at the mouth, pulling or lugging at one rein, loss of condition, staring coat, irregularities of the bowels, and general ill condition.

TREATMENT: Examine by placing the horse in a good light, seize the tongue in the left hand, draw gently to one side, place the thumb against the roof of the mouth and the teeth may be plainly viewed. Reverse the order to see the other side of the mouth. Watch closely for scars on the cheeks or

tongue, and if any are found, take your animal to a veterinary surgeon and have the offending projections removed. Decayed teeth also frequently cause annoyance. If one molar tooth is extracted, the tooth in the opposite jaw frequently becomes long and protrudes in the cavity, when it becomes necessary to cut it off with forceps.

The cuts on page 10 show the difference in the teeth at different ages. A little study will enable anyone to approximate the age of the animal.

At three years old the middle teeth above and below come into use. The milk teeth at the sides of these are whiter than permanent teeth.

At four the next two give place to permanent teeth.

At five all the milk teeth are replaced by permanent teeth, and the horse has a "full mouth."

At six the cups are quite well worn out of the crowns of the middle two teeth below.

At seven they disappear from the next two at the sides of these. The cuts show the mouth at seven, ten and extreme old age.

Cut (b) shows tops or crowns of teeth at different places as it appears from wear as the animal advances in age. As we approach the root, the wearing surface of the tooth becomes narrow from side to side, but broad from before backward across its surface, being somewhat triangular in shape, with the dental star nearest the back edge. This condition will be more apparent as age advances.

Acute Indigestion.

This results from sudden filling of the stomach with indigestible materials, such as new hay or corn, grain that is musty or given in undue quantity, large draughts of water after a full meal or when animal is exhausted, or from severe exercise immediately after a full meal.

The symptoms are at first those of simple colic, the animal shows pain by biting, looking around at the side and pointing the nose well forward, by frequently lying down and attempting to roll occasionally, arching the neck, and attempting to vomit and eructate gas. Occasionally he succeeds in throwing off gases from the stomach through the swallow or oesophagus. Occasionally a horse will vomit, the ejected materials passing out through the nose. However, this is more frequently a symptom of rupture of the stomach. Cold sweats bedew the body. The pulse at first is normal but soon increases in frequency. The temperature is usually not raised.

TREATMENT: Give, early, a half ounce of tincture of ginger with a dram of oil of peppermint added to a pint of water. If

this does not bring relief in a half hour, give an ounce of tincture of opium with an ounce of sulphuric ether in a pint of water.

If the animal bloats up and still continues to have great pain, give an ounce of aromatic spirits of ammonia with a half ounce of tincture of ginger and a half ounce of fluid extract of hyoscyamus. Where flatulence or bloating is marked, dram doses of naphthaline in a half pint of water often afford relief. Give walking exercise.

After recovery, give easily digested laxative food, such as bran and oats with a small quantity of mixed hay and regular course of Dr. Hess Stock Food.

Chronic Indigestion.

This disease is shown by loss of appetite, roughness of the hair, colicky pains after eating or drinking, even a small quantity of food or a small amount of cold water will frequently cause the animal to lie down. The bowels are usually constipated, the animal becomes anaemic, as shown by paleness of the mucous membranes, and is easily exhausted.

TREATMENT: Give a small amount only of clean, easily digested food, such as oats, bran and carrots. Give water frequently but only in small quantities. Never give very cold water. Milk and eggs are also an excellent preparation for these cases. By raising a basin containing milk to the lips several times a day the animal will soon learn to like it, and will drink it readily. Hay tea with middlings and flaxseed meal is also excellent, and it is very nutritious and quite easy to digest. Blue grass pasture is also very desirable. Dr. Hess Stock Food is especially valuable in cases of chronic indigestion. It supplies the bitter tonics and laxatives so essential in this disorder.

Flatulent Colic.

This disease frequently arises from food given in undue quantities, from badly cured or musty grain, from severe exercise after a full meal, from exposure to cold rains when horse is exhausted, from large draughts of cold water given after a full meal which washes the undigested food through the small intestine into the colon, the most common seat of flatulent colic.

A very prominent symptom is fullness of the sides, especially on the right side at the flank. The back is arched, the breathing becomes frequent, the nostrils dilate and the pulse increases in frequency. The animal shows pain by frequently lying down.

TREATMENT: Give a tablespoonful of Dr. Hess Colic Remedy in one pint of water. Repeat in half an hour if necessary. After three doses give every hour until re-

lieved, or if you cannot get this preparation give a pint of raw flaxseed oil with an ounce of aromatic spirits of ammonia and an ounce of turpentine well shaken together. If the pain is very great six to eight drams of Cannabis Indica can be placed in the mouth between the teeth, or 6 or 8 drams of chloral-hydrate can be given dissolved in a pint of water. A half to an ounce of hyposulphite of soda dissolved in a pint of water is also excellent to prevent the further formation of gas.

Spasmodic Colic.

This disease is due to sudden spasm of the muscular walls of the intestines. It results from irritating materials, either water or food, or frequently intestinal worms.

SYMPTOMS: The animal shows great pain, will lie down suddenly and will roll frequently, will get up and kick at the belly, turn once or twice around and then lie down again. The tail becomes kinked or bent, and the animal frequently strikes the belly with the hind foot. The pain, as shown by the animal, is very great, but the pulse and temperature are not abnormal.

Spasmodic Colic.

TREATMENT: Give Dr. Hess Colic Remedy as directed, or a dram of fluid extract of belladonna with an ounce of laudanum given at once. This should be followed in one half hour with an ounce of chloral-hydrate and one-half ounce tincture of ginger in a pint of water. If the pain is extreme, give 6 to 8 drams of extract of Cannabis Indica made into a ball and placed well back in the mouth. Hot rugs applied to the abdomen also give relief. Injections of warm water should also be employed.

Impaction of the Stomach.

This difficulty arises from an over amount of food given after a period of fasting or from food of a bulky indigestible nature given in undue quantity. It may also arise from atony or partial paralysis of the stomach.

SYMPTOMS: The horse shows colicky pains with frequent biting and striking with the front feet. The muscles of the shoulders tremble and he has an anxious look with dilated pupils. Horse strikes viciously with the front foot, frequently demolishing mangers. He will strike against the manger with the breast, will frequently look around at the side, will move

from one side of the stall to another, especially with hind parts. The pulse becomes rapid and weak, the temperature will also rise two or three degrees. There will be tremor of the muscles of the front shoulders, and if no relief is afforded death will follow in from twelve to twenty-four hours from exhaustion.

TREATMENT: Give Dr. Hess Colic Remedy, or give a drench of two or three quarts of warm water to soften the contents of the stomach. Add a dram of nux vomica. Give hypodermic injections of morphine, 4 to 6 grains. If not relieved in an hour or two, repeat the drench of warm water and give a pint of raw flaxseed oil with one-half ounce tincture of ginger. Allay the pain by hypodermic injections of morphine or full doses of extract of Cannabis Indica, six drams, placed upon the tongue.

Inflammation of the Bowels.

This disease is often caused by injuries, or from retaining indigestible materials, or from draughts of cold water or exposure to cold.

The symptoms at first are those of common colic, with a slight elevation of temperature and an increase in the frequency of the pulse. The animal will show pain by pressure upon the abdomen. He will lie down somewhat carefully, will roll upon his back and will remain in this position. As the disease progresses the temperature will rise to 103 or 4 or even 5 degrees F., the pulse also becomes frequent and quick, the nostrils are distended, the pupils are dilated and the animal has an anxious look. All food or drink is rejected and the animal frequently walks around the stall.

TREATMENT: This disease is extremely fatal and the only chance of success is in keeping the animal quiet. This is best done by the administration of laudanum in ounce doses, or powdered opium in one to two dram doses every 4 to 6 hours. Give Dr. Hess Colic Remedy, or an ounce of tincture of hyoscyamus with 6 to 8 drams of Cannabis Indica to allay the pain and produce sleep. Hypodermic injections of five grains of morphine can sometimes be given to advantage, but the dose of morphine or opium should not be repeated, as it causes delirium. Hot rugs should be applied to the abdomen.

Constipation.

This difficulty frequently arises from feeding too great quantities of coarse, indigestible material, such as straw, timothy hay and corn without sufficient salt or providing the animal with water. If present any considerable length of time the animal loses flesh, has a staring coat, and is hide bound.

The symptoms are those of light colic, the pulse and temperature remain normal, the appetite is fairly good, and the

animal will frequently pass hard, dry pellets of dung. The characteristic symptom of constipation is that the animal will lie down flat on the side, will stretch out and remain in this position for a considerable length of time.

TREATMENT: In moderate cases a well regulated, laxative food is all that is required, well salted bran mashes with flaxseed meal or green vegetables, such as beets and carrots. Dr. Hess' Stock Food is especially valuable in cases of constipation, as it acts as a laxative and also tones up the muscular walls of the bowels and increase their peristaltic action. No horse will appear at his best or take on flesh rapidly if constipated.

Impaction of the Bowels or Colon.

Impaction of the bowels with hard, dry matter is a common occurrence, and the symptoms are those of constipation but more marked and persistent.

TREATMENT: Give a pound of Glauber's salts dissolved in a gallon of warm water. Follow this in six hours with a pint of raw flaxseed oil and four drams of powdered aloes. Encourage the animal to drink large quantities of water. An ounce or two of common salt given in two quarts of water is also excellent as it will induce thirst. Large doses of powerful purgatives should be avoided, as there is danger of rupture of the bowel before the mass of dry material can be removed. Give frequent injections of warm water and glycerine, two ounces of each. Eserine given hypodermically often does well when other remedies fail. It should be used only by a veterinarian.

Catarrh of the Bowels.

This is an irritation or inflammation of the mucous membranes and bowels. It is caused by irregularity in feeding, either in time or quantity, from bulky food, from constipation or hard work, from feeding only a single article of food, from giving undue quantities of indigestible, innutritious or mouldy food, from irritation of intestinal worms, or from undue quantities of cold water while animal is heated.

SYMPTOMS: The animal will have a rough coat, unthrifty appearance, hide bound, irregular appetite, dullness, tucked up in the flanks, irregularities of the bowels, and the passages are frequently hard and contain undigested grain and are covered with a film of mucus which is fetid and sour. The animal shows an inclination to eat unnatural foods or lick the walls.

TREATMENT: Give a small quantity only of green food, sound hay and ground oats or roots, moderate exercise in a clean, warm, comfortable stable, rock salt to lick at will, and a course of tonics. As the animal begins to improve, care should

be taken that it be not overfed. An ounce of sulphate of soda in the drinking water once a day is soothing and laxative. Tonics should also be given, such as gentian, nux vomica and salts of iron. Dr. Hess Stock Food has an excellent effect in these cases, as it contains the tonics necessary to tone up the debilitated organs, improves the action of the bowels and quality of the blood and instills life and vigor into the animal.

Diarrhoea.

This is the free passage of soft or liquid material from the bowels. The common causes are a full drink of water followed by active exercise, feeding soft, watery food or rapidly grown green foods, stagnant or foul water, musty or mouldy grain, irritating materials, improper mastication, intestinal worms, taking undue amount of food at long intervals, sudden exposure to cold, foods that are extremely acid or sour, or fermenting materials of any kind.

TREATMENT: Carefully regulate the diet and remove the cause. If due to irritating substances in the bowels, give a pint of olive, flaxseed or castor oil. Follow with good, clean food in moderate quantities only. Give gruel made from flour and add an ounce of laudanum if severe and persistent, or give a dram of powdered catechu with a dram of powdered opium, and repeat in four or five hours. If due to improper mastication or irregularities of the teeth, have the teeth dressed by a competent veterinarian. If due to excessive acid condition of the food, give one-half ounce doses of bicarbonate of soda twice a day. If accompanied by flatulence, charcoal in ounce doses should be given. Ginger, gentian and nux vomica are also excellent, if due to flabby, dilated condition of the walls of the intestines. Keep the animal quiet, and give only small quantities of water frequently. Colts suffering from diarrhœa should be given from 2 to 4 ounces of castor oil to remove any irritating substance, followed with dram doses of prepared chalk and 30 grains of subnitrite of bismuth every four to six hours. Tablespoonful doses of paregoric with an equal amount of tincture ginger is also excellent. The dam should be fed carefully, avoiding undue amounts of green food.

Intestinal Worms.

A number of intestinal parasites are found in the horse. They are usually harmless unless present in great numbers, when they may cause loss of condition, irregularities of the bowels, spasmodic colic, or even fatal inflammation.

Bot—This is the larva of the nit fly (Oestrus equi), and its natural abode is in the stomach of the horse. The mature

insect of this parasite deposits the eggs on the legs, breast and under the jaws of the horse. From the former the eggs are licked by the animal and gain access to the stomach. Those under the jaw probably drop into the feeding troughs and are also consumed. The larvae are found in the stomach and are known as bots. They adhere to the walls of the stomach and small intestines by hooklets and remain from fall to early spring, when they pass off and burrow into the earth, from whence they appear as the nit fly. They deposit their eggs and die. They are not known to take any nutriment. They seldom cause any disturbance.

TREATMENT: There is no medicine sufficiently strong to destroy them that can be safely given to the horse; however, gruels are advocated by some practitioners, to afford them nutriment and thereby prevent their irritating the animal. Better prevent their gaining access to the stomach of the animal by scraping the eggs off the legs and remove them from the breast and under the jaws as soon as deposited.

Ascaris Megalocephala.. The Ascaris found in the horse are long, round, white worms, which infest the stomach and small intestines. They may no cause any disturbance if only a few are present, but frequently they are found in great numbers and cause diarrhœa and general ill condition, with occasionally spasmodic colic or fatal inflammation. They very probably gain access to the animal through the feed and drinking water. Water from pools or shallow wells situated close to the barnyard should not be given to animals to drink, as it frequently contains myriads of the eggs of these parasites.

The ascaris, or long, round worms, are best treated by giving 10 to 15 grain doses of santonine every six hours until four or five doses are given. It should be given an hour before feeding time. Six hours after the last dose has been given, an active purge should be administered, 6 to 8 drams of aloes suspended in a pint of water or given in a pill, or a pint of raw flaxseed oil with 4 to 6 drams of aloes, or better, still, use Dr. Hess Worm Powder, which is prepared especially to expel and prevent the development of these parasites. It prevents the formation of unhealthy mucous so favorable to the development of intestinal worms.

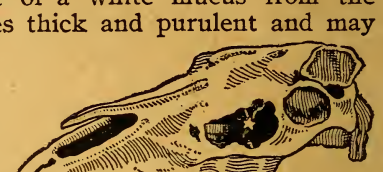
The Oxyuris is a small, round, white worm, tapering at either end. It infests the large intestine, the floating colon and rectum. It is most frequently found in horses that are poorly nourished and are given a great amount of bulky, innutritious food. Horses fed on corn and timothy hay or corn fodder are almost sure to be infested with these parasites. Horses which have an occasional run at grass are comparatively free from them. They can be prevented or removed by properly regu-

lated diet with tonics, especially the salts of iron and nux vomica. We can especially recommend Dr. Hess Worm Powder as being effectual in removing these parasites when given as directed. It should be given in soft, laxative food, such as bran and oats. If the bowels are constipated give an ounce or two of Glauber's salts in the drinking water once or twice a day as the case requires. This line of treatment is quite effective, and is all that is required in ordinary cases.

Nasal Catarrh.

Nasal Catarrh is an inflammation of the mucous membrane lining the nose. It may even extend into the superior maxillary sinuses, which communicate with the nasal cavity.

Symptoms are, the escape of a white mucus from the nostrils which later on becomes thick and purulent and may emit a very offensive odor, the animal becomes thin, with staring coat and irregular appetite.



White Star Shows Where to Trepan.

TREATMENT: The animal should be given good surroundings, should have a dry, light box stall, and should also be given nutritious food with tonics. Dr. Hess Stock Food is one of the best tonics that can be employed in this condition. Counter-irritants can also be used to advantage in some cases. A blister composed of equal parts of cerate of cantharides and vaseline should be applied over the course of the nostrils, extending over a distance of 4 or 5 inches. The blister may be repeated in a week or ten days. If this line of treatment does not effect a cure, it is best to trepan, cutting into the superior maxillary sinuses, and injecting medicines direct to diseased parts. This operation is quite simple in the hands of a qualified veterinarian, and is almost sure to effect a complete cure.

Laryngitis,

or Inflammation of the Larynx commonly called Sore Throat.

This is a disease characterized by rise of temperature, loss of appetite, and especially difficult breathing. The animal will frequently emit a coarse, grating noise during inspiration and if the disease becomes much aggravated the chink of the glottis may become entirely closed and the animal die from suffocation. The pulse ranges from 60 to 80 beats per minute, and the temperature frequently rises to 104° F.

TREATMENT: Give the animal a good, warm stall, and protect with a light wool blanket. Apply around the throat a liniment made from equal parts of linseed oil, turpentine and

aqua ammonia. Give Dr. Hess Distemper, Fever and Cough Remedy or a powder composed of a dram of powdered golden seal with a dram of chlorate of potash placed on the tongue every four hours. Steam from scalded oats to which has been added a teaspoonful of carbolic acid is good. This can be done by placing oats in a sack and inserting the nose into the sack so that the steam will be inhaled. Air, however, must be admitted to prevent suffocation. If the breathing is very difficult and there is danger from suffocation, a tube should be inserted into the windpipe. This, of course, should be done by a veterinarian.

Bronchitis,

or Inflammation of the Bronchial Tubes.

SYMPTOMS: Bronchitis is characterized by difficult or rapid breathing. The number of respirations is out of proportion to the pulse or even to the temperature. In severe cases of bronchitis the respirations will frequently reach 50 or 60 per minute, and the temperature ranges from 103° to 105° Fahrenheit, pulse from 60 to 80. Churning of the mucous within the tubes can be detected by placing the ear near the windpipe. The animal refuses food and suffers from severe cough.

TREATMENT: Give the patient good surroundings, place in a well lighted, well ventilated, dry box stall, clothe the body with light woolen blankets to make the animal comfortable, and place a bucket of cold water, in which has been dissolved one-half ounce nitrate of potash, within easy reach. Give Dr. Hess Distemper, Fever and Cough Remedy, and cause the animal to inhale steam by scalding oats or bran, placing it in a sack, add a teaspoonful of carbolic acid and two teaspoonfuls of tincture of iodine. Repeat frequently. Give dram doses of muriate of ammonia with two drams of extract of licorice every four hours; or ounce doses of spirits of mindererus with two ounces of fluid extract of licorice, is excellent if animal is much exhausted. In the earlier stages, 15 drop doses of tincture of aconite with half dram of fl. extract of belladonna is excellent if the pulse and temperature are high. Nutritious food should be given and the animal encouraged to eat, to prevent the powers from flagging. Hay tea with eggs and milk may be given if the animal becomes much exhausted. When the fever subsides, the animal should be supported with tonics, and for this purpose there is no better preparation than Dr. Hess Stock Food, with a small amount of good, clean grain.

Acute Congestion of the Lungs.

This condition is characterized by a sudden flow of blood to the lungs. It very frequently results from allowing the horse

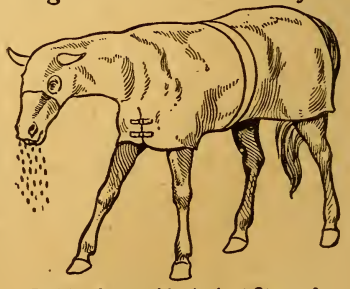
to stand in a cold draught, or from exposure to cold in any way when heated.

Symptoms are staring coat, or there may be actual shivering, cold ears and cold legs, dilated nostrils and rapid breathing. The animal will seen in great distress, and the temperature will rise to 105° or 106° F. The pulse is full and rapid at first, later on it becomes weak and irregular. In very severe cases, the animal will lie down, get up, and seek an open window or door or show other signs of distress. As the disease progresses the mucous membrane of the mouth becomes blue or purple. A frothy mucus may be emitted from the nose tinted with blood. Cold sweats frequently bedew the body.

TREATMENT: Place him in a good, warm box stall, cover with a warm blanket, give friction to the legs and body to encourage the circulation in the skin. Rub briskly, and bandage the legs with hot rugs. If the animal is very fat and full blooded, good results are obtained from drawing off four to six quarts of blood from the jugular vein, if done early. Give Dr. Hess Distemper, Fever and Cough Remedy, or 15 drop doses of fluid extract of belladona with ten drops tincture of aconite and an ounce of sweet spirits of nitre every two hours until three or four doses are given. Make an effort to get up the circulation of the skin by frequent rubbing. Later on two ounce doses of spirits of mindererus should be given every two or three hours. Keep the animal quiet. An attack usually lasts from six to ten hours, and recovery is as rapid as the onset.

Lung Fever or Pneumonia.

This disease sometimes follows acute congestion of the lungs, although the congestion in lung fever is not usually so marked, nor does it assume such alarming symptoms as does acute congestion, or pulmonary apoplexy.



Position Assumed In the Last Stage of Pneumonia.

The cause of inflammation of the lungs can usually be traced to exposure to cold or standing the horse in a very cold, draughty barn. Illy ventilated stables or irritating gases also frequently set up the disease, or it may result from severe exertion or direct injury to the lungs, or as a complication in strangles, catarrhal fever or purpura. In cattle it may be the localization of a specific disease, as in contagious pleuro pneumonia. Inflammation of the lungs is almost always associated with inflammation of the covering or pleura.

SYMPTOMS: In many cases the breathing in the earlier stages is not difficult. The symptoms are not well marked. The temperature will show an elevation of two or three degrees, and the pulse will reach 60 or 80. There is some lassitude with loss of appetite, the coat is staring and the extremities and ears cold, or there may be actual rigors, although the symptoms do not assume an alarming nature. These symptoms will last for three or four days, when more grave symptoms supervene, the temperature becomes higher, the pulse more frequent and weak, and the breathing accelerated. The strength of the animal is much reduced and he will frequently change from one foot to another, the head droops and the ears lop, swellings frequently appear between the front legs or along the belly, tapping upon the sides shows dullness, and the absence of respiratory sounds within the chest indicates that the lung has become solid, and the air no longer permeates its tissues. All food is rejected, although water is sometimes sought with evident relish. The horse frequently retains a standing position throughout the course of the disease, although this is not without exception.

TREATMENT: Early in the disease provide the animal with a well ventilated, warm, light box stall, provide with sufficient light wool blankets to make him comfortable but do not weight him down with heavy, coarse clothing. If the pulse is rapid and full with a temperature of 104° F., give Dr. Hess Distemper, Fever and Cough Remedy, or the following prescription: Tincture of aconite root, a dram and a half; fluid extract of belladonna, four drams; add enough sweet spirits of nitre to make four ounces; mix and give a tablespoonful in one-half pint of water every four hours. When the pulse becomes somewhat modified, discontinue the use of the aconite. A bucket of clean, fresh water should be kept before him at all times. Add a teaspoonful of saltpetre to the water twice a day

If the temperature rises very high, 105° or 106° F., large doses of quinine sometimes have a very marked effect in reducing the temperature; one-half ounce given in the evening will frequently bring the temperature down two or three or even four degrees in the courses of ten hours. The quinine may be repeated in twenty-four hours if the temperature does not subside with the first or second dose. From two to three ounce doses of spirits of mindererus with one to two dram doses of tincture of nux vomica acts very well, in the later stages, as a stimulant and tonic. It also aids much in sustaining the action of the heart, which frequently becomes very weak.

Or the following prescription may be given as a stimulant to aid in throwing off the deposit within the lungs: Ammonia carb., one ounce; extract of licorice fluid, one and a half

ounces; tincture of nux vomica, four drams; add water to make sixteen ounces, and give two ounces every six hours.

As the temperature declines the powers of the animal must be sustained with a fair amount of good, nutritious food, such as bran and oats or corn, if other foods are refused. Hay tea is also excellent. Eggs and milk can be given to advantage. Good tonics should be given at this stage, and for this purpose no preparation will give better results than Dr. Hess Stock Food.

Pleurisy.

Pleurisy is the acute inflammation of the pleura or covering of the lungs. It is almost always associated with pneumonia or lung fever, but occasionally occurs independent of other diseases. The causes are usually the same as those which produce lung fever or congestion of the lungs.

SYMPTOMS: The animal shows pain and soreness when made to turn, the temperature is elevated, the respirations are increased, and the animal looks anxious. The walls of the chest are fixed, and the breathing is performed by the abdominal muscles, and frequently a line can be seen extending from the flanks to the under surface of the ribs. There is a painful, suppressed cough, and occasionally tremor of the muscles of the sides and shoulders. The disease is frequently ushered in with a rigor or chill, with coldness of the body and extremities. The back is arched and there is great tenderness upon pressure on the walls of the chest.

TREATMENT: Give good, cheerful surroundings, clothe comfortably. If the pulse is frequent and full, give ten to fifteen drops tincture of aconite with twenty drops fluid extract of belladonna. If the animal shows great pain, three to five grains of morphine should be injected hypodermically. Hot rugs should be applied to the sides, and great care taken in replacing them that no cold air strikes the animal. Give Dr. Hess Distemper, Fever and Cough remedy or six drams of extract of Cannabis Indica should be placed well back on the tongue, or three to four drams of chloral hydrate should be given in solution. Supply the animal with plenty of cold water, in which an ounce of nitrate of potash has been dissolved. Blisters in pleurisy and pneumonia are of doubtful utility, and they, no doubt, frequently do more harm than good, as they cause the animal great uneasiness; he will paw and show signs of pain, which will be attended with a rise of temperature, more frequent breathing, and an aggravation of the disease. Hot rugs or hot fomentations, however, should be employed, as they bring relief and aid in recovery. During recovery in pleurisy tonics should be administered, especially is Dr. Hess Stock Food valuable in these cases.

Pink Eye.

This disease is produced by some specific poison, especially when the constitution is debilitated by damp, filthy stables or during periods of cold, wet weather, or from reducing influences.

The first symptoms are those of fever with chills and dullness, succeeded by swelling of the joints and pain in the limbs. The pain in the limbs is shown by restlessness, shifting of the feet, and tenderness. At first the swelling may be limited, but soon will appear over a considerable surface of the legs. The temperature rises to 103 or 104° F. The bowels are irregular, usually constipated, and the dung is often covered with mucus. The eyes appear red and congested, from whence it gets the name of Pink Eye. There is frequently cough. The disease usually runs its course in from six to ten days. A very frequent sequel to this disease is partial paralysis of the posterior extremities. The motion becomes irregular and unsteady, the animal walks with difficulty, and the motions of the hind parts are irregular and retarded.

TREATMENT: If the bowels are constipated, give a pint of raw linseed oil or dissolve four ounces of Glauber's salts in a gallon of drinking water and give this twice a day until the bowels respond. Active physics, however, should be avoided. One half ounce nitrate of potash should be given twice a day in the drinking water, the food should be limited and easily digested, such as bran and oats. The eyes should be bathed with warm water two or three times a day. The stall in which the animal is kept should be slightly darkened. Dram doses of tincture of nux vomica are especially valuable in keeping up the appetite, and also in sustaining and improving the tone of the nerves of the extremities. Daily exercise in a large box stall or shed should also be given. If the paresis or partial paralysis is quite marked, the muscles of the hips and back should be briskly rubbed and a stimulating liniment applied, such as compound soap liniment.

Influenza,

Distemper or Catarrhal Fever

are different names applied to a chain of symptoms which have many conditions in common, and are attended in a greater or less degree by fever, dullness, loss of appetite, sore throat, discharge from the nostrils, quickened pulse and depression of strength. These diseases are most common in the spring and fall when the patient is shedding the coat, although it may occur at any season of the year. The conditions or influences which cause the outbreak have never been fully determined;

however, it seems very probable that the disease can be communicated from one to another under favorable circumstances.

TREATMENT: If no complications supervene in simple cases of catarrhal fever, influenza or distemper, little treatment is required except good surroundings, care and proper clothing and a cool, laxative diet. Regulate the bowels by feeding clean, easily digested food with laxatives, such as bran and oats, and if necessary add to this an ounce or two of Glauber's salts dissolved in water. If the temperature runs high, one-half ounce of saltpetre dissolved in the drinking water twice a day is excellent. If the appetite fails, from one-half to a dram of tincture of nux vomica with two drams of tincture of gentian should be given in one-half pint of water three times a day.

Strangles

Horse with Strangles.

is a disease in young horses usually attended with swellings and the formation of matter between the bones of the lower jaw or elsewhere.

CAUSE: Usually found in exposure to cold, damp, wet stables, improperly drained pastures, impure air, sudden thaws and contagion by associating with animals suffering from the same disease.

SYMPTOMS: Thirst, staring coat, with loss of appetite, dullness and languor, cough and redness of the mucous membrane of the nose, accelerated breathing, increased pulse and great thirst. Sometimes swelling appears between the lower jaws; this is hot and tender, at first hard, later on it becomes soft and flabby, which indicates the formation of pus. The water drank is frequently returned through the nose, and the food after being chewed often drops from the mouth. The throat often swells so that the breathing is laborious. Occasionally abscesses form in the parotid gland, near the ear or at the edge of the tail or in other portions of the body. Sometimes abscesses form in the deeper tissues, such as the liver, the pancreas, or even in the intestinal walls.

TREATMENT: Sustain the strength of the animal by good, nutritious food, to which has been added Dr. Hess Stock Food as directed; keep animal where it is clean and dry, be sure that he inhales no irritating gases, such as ammonia fumes. Bathe the swelling under the jaw with warm water, or apply poultices or liniment composed of equal parts of linseed oil, aqua ammonia and turpentine. When the abscesses point, as will be shown by a soft place on the surface, open freely and allow the escape of pus. If the breathing is very difficult, steam with scalded oats or bran by placing it in a sack and placing it

over the nose. If this does not bring relief and there is danger from suffocation, a tube should be placed in the windpipe to supply air. Give Dr. Hess Distemper, Fever, and Cough Remedy.

Purpura.

Purpura is a disease which frequently follows distemper, catarrhal fever, strangles and other debilitating diseases of the respiratory organs, especially if horses have been stabled in a poorly ventilated, dark, damp barn.

The disease is manifested by swellings on the nose, face, neck, along the sides, on the limbs, belly or indeed anywhere on the body. The swelling of the legs is characteristic. It will extend upward a certain distance, where it suddenly comes to an end, as if a string had been tied around it. The lips are often so badly swollen that they are almost immovable, and the nostrils may be almost swollen shut, the mucous membrane of the nose presents red spots showing extravasation of the blood, (similar spots may also be seen on the skin of white animals), shivering frequently marks the onset of the disease, but the essential symptom is the swellings spoken of. The animal moves with difficulty, appears stiff and the swollen parts are quite tender to the touch. When the swellings occur on the body, they may be taken for the stings of insects. They frequently change from one point to another. The disease is very apt to recur, and when the patient seems to be on a fair way to recovery, the swellings will return and show all the symptoms again in an aggravated form. The least exposure to cold or even a damp stall will cause a return of the symptoms. In severe cases the skin may slough or blood ooze through. Bloody serum will issue from the eyes and the nostrils will discharge blood tinted secretions. If animals suffering from influenza are kept in well ventilated, clean, dry stables, there is much less danger from attacks of purpura. All writers agree that the disease is frequently due to the inhalation of ammonia or from irritating or offensive gases.

Effect of Purpura.

TREATMENT: Give the animal a laxative of linseed oil, one pint, or Glauber's salts, four to six ounces, dissolved in a quart of water. Follow this with the salts of iron and chlorate of potash. Two dram doses of chlorate of potash should be given every four hours for a period of twenty-four hours. This remedy seems to have a very beneficial effect in preventing extravasations of blood, but if given too copiously is apt to cause colicy pains.

After twenty-four hours, the following should be given: Chlorate of potash, two ounces; dried sulphate of iron, two ounces; powdered nux vomica, six drams; powdered gentian, one ounce; mix and make into eight powders, and give one powder every six hours. One-half ounce of nitrate of potash should also be dissolved in the drinking water twice a day. The bowels should be kept fairly active with occasional doses of Glauber's salts or a laxative dose of oil. Under no condition should the horse be allowed to become cold or be exposed to dampness. The food should be easily digested and nutritious, such as bran, oats, carrots, or beets. During recovery, tonics should be administered, especially those containing iron, and for this purpose Dr. Hess Stock Food can be used to the very best advantage.

Roaring.

Roaring is a harsh, grating sound, emitted from the larynx of a horse during inspiration. It is more pronounced if the animal is made to undergo severe exertion, especially if animal is held tightly by the reins. It frequently follows distemper or strangles.

TREATMENT: The treatment for roaring is not satisfactory, and but few cases are benefited. However, a blister to the throat, with dram doses of tincture of nux vomica three times a day, gives good results in certain cases.

Heaves.

This disease is characterized by a dry, hacking cough, first seen after drinking, more aggravated after a full meal or a heavy draught of water. The nostrils dilate with each inspiration and the flanks rise with each expiration. Early in the disease a slight, frothy, watery discharge will issue from the nose, and a rattling sound be heard in the head.

TREATMENT: Feed with care, avoid dust of every kind. Horses suffering from this disease should never be permitted to engorge themselves with food or drink. Large quantities of bulky food should be avoided. Hay and grain should be made damp an hour or two before given. The following formula gives excellent results: Fluid extract of stramonium, fluid extract of lobelia, of each one ounce; Fowler's solution of arsenic, six ounces; mix and give a tablespoonful in half a pint of water on food, two or three times a day. Dr. Hess Heave Powder contains all the above principles with other valuable agents, which we have found effective in the treatment of this disease.

Panting.

Panting is frequently seen in the horse during the spring months when first put to work. It more often occurs in horses having a heavy coat and which are somewhat debilitated. Such animals if put to severe exertion during warm weather suffer greatly from the heat.

TREATMENT: Care should be taken in the spring time or during very hot weather that the animal be not overheated. The patient should also be encouraged to molt as early as possible. If shedding is delayed, the animal should be clipped, which will very frequently afford complete relief. Tonics are also of very great advantage in building up the animal. We can especially recommend Dr. Hess Stock Food in these conditions.

Coughs.

Many horses are troubled by an irritation of the larynx or bronchi from cold and other causes; have a very annoying cough.

TREATMENT: The following will be found of the greatest value: Fluid extract of belladonna, one ounce; oil of tar, three ounces; mix, shake well and give a tablespoonful on each feed. Or the following powder will be found of use: Muriate of ammonia, two ounces; extract of licorice, two ounces; Dover's powder, one ounce and a half; mix and make into twelve powders. Give four each day.

Cough in heaves is usually of a dry, hacking nature. It is aggravated by feeding dusty food of any kind. For these cases Dr. Hess Heave Powder is particularly adapted.

Constitutional Diseases.

The blood is the circulating fluid. It passes outward from the heart through the arteries to the different tissues of the body, and returns through the veins. It is composed of fluid, liquor sanguinis, in which numerous minute, solid particles, blood globules, float, of which the greater part are red, the remainder colorless or white. Analysis of the blood shows it to contain water, red corpuscles, albumen, salts, extractive matter and fibrin. These materials in health are usually in fairly regular proportions, but in certain diseases their relative amounts vary considerably.

Anaemia.

This term is applied to a condition of the system in which there is deficiency or poverty of the blood, and which is frequently brought about by loss of blood, hemorrage, discharge of any of the common fluids, diarrhoea or diabetes, insufficient food or deprivation of fresh air, exhausting diseases and the action of certain poisonous agents, illy ventilated stables or other debilitating influences.

The symptoms of anaemia are paleness of the mucous membranes, with occasionally dark colored appearance of the membrane of the nose. The mucous membrane of the eye is also pale, the mouth cool, and the tongue generally unnaturally soft. It is frequently found in young, growing animals in-

sufficiently fed, that are exposed to the vicissitudes of weather during the winter months. In horses anaemia is shown by extreme debility of the muscular system, even showing partial paralysis, the animal is easily exhausted, with small, feeble pulse which becomes irregular and frequent upon slight exertion. The contractive power of the muscles is reduced and fatigue is shown on the slightest exertion. The bowels are often constipated from want of tone of the muscular coat, the digestive powers are feeble and impaired, and the animal frequently suffers from colicky pains; the secretion of gastric juice is usually impaired as the result of ill nutrition, which constitutes further cause for the very marked anaemic condition. Swelling of the limbs or dropsy of the abdomen is not at all infrequent. The appetite is sometimes ravenous and abnormal and the animal may seek unnatural foods; the quality of the blood may be so impaired that its watery constituents exude from the vessels and settle in the tissues, causing dropsical swellings or stocking of the legs, or even ascites or abdominal dropsy. The hair stands on ends and is dry and harsh, the eyes are sunken and in extreme cases a puffy appearance of the eyelids may be noticed. The disease may assume such grave proportions as to cause a staggering gait with even inability to rise, hurried breathing, becoming quick and wheezy upon the least exertion, with palpitation of the heart.

PREVENTION: Avoid anything which will reduce the system, such as excessive bleeding, long continued use of powerful diuretics or purgatives, long continued yield of milk without proper nourishment, irregularity in feeding or continuing a single article of diet too long, or giving large quantities of woody, innutritious food.

TREATMENT: Remove all the causes of the disease possible, and support the animal by easily digested, nutritious food, in small quantities at first. Corn, oats and barley ground, and meal cake, with a small amount of mixed hay is excellent food, or in extreme cases hay tea gruel should be given. Tonics are also of great importance, especially those containing salts of iron with bitters. A daily amount of common salt should also be supplied in small quantity. Provide the animal with a dry place, with plenty of sunshine and good cheerful quarters.

Anaemia is one of the most common ailments of domestic animals, and for its treatment we can speak with great confidence of the advantages of feeding Dr. Hess Stock Food. It ontains the bitter tonics and salts of iron so necessary to proper digestion, which is the first essential to improve the impoverished blood. The numerous salts which are absolutely necessary for the health of the animal are supplied in this Food.

Its employment in the different forms of anaemia, when aided by proper hygienic surroundings and good, clean, nutritious food, is almost sure to effect a complete cure.

Ascites, or Abdominal Dropsy.

This consists of a dropsical infusion in the abdominal cavity. The causes are chronic peritonitis, inflammation of the liver, diseases of the heart, and from eating large quantities of succulent yet innutritious material. It also results from anaemia, as the result of improper nutrition.

The symptoms are enlargements of the belly, and sometimes stocking of the legs, the quantity of water in the abdominal cavity if quite large, causes difficult breathing. Dropsy of the legs and submaxillary space may also be noticed. The animal becomes poor, with feeble pulse, irregularities of the bowels, and occasionally loss of hair.

TREATMENT: Provide the animal with good surroundings, and give a laxative, such as bran and oats with a daily dose of two or three ounces of Glauber's salts. Good, nutritious food should also be provided. The action of the kidneys should be stimulated by one-half ounce doses of nitrate of potash twice a day. Bitter tonics with salts of iron should also be administered. The general stimulating effects to the kidneys and the bitter tonics, with the laxatives and salts of iron, which enter into the composition of Dr. Hess Stock Food, make it one of the best preparations that can be given in this disease; especially is it valuable if the difficulty is due to anaemia.

Rheumatism.

Rheumatism is a form of inflammation which usually attacks the fibrous structures of the body, such as the muscles, tendons, joints and their coverings. Acute, articular rheumatism or rheumatism of the joints is characterized by frequent shifting from one point to another. The corresponding joints are frequently affected at the same time, that is, both knees or both hock joints may be the seat of the disease one day, the following day it may have shifted to the shoulder or pastern joints. This disease is said to be due to certain acids in the blood, although sudden exposure to cold or wet frequently acts as the exciting cause.

SYMPTOMS: In acute rheumatism there is dullness, languor, stiffness of the joints, with indisposition to move. There may be lameness and heat in one limb, with swelling of the joints or tendons. The swelling is often soft, but may become hard and resisting. The swelling in rheumatism very seldom suppurates or forms pus. The joints are extremely tender to the touch, swollen and hot. The urine which is alkali in herbiv-

orous animals, sometimes becomes neutral or even acid. The animal remains down a great deal, and will only rise when urged to do so.

In sub-acute or chronic rheumatism the swelling on the legs may be absent, but there will be some stiffness. Lameness may appear in one leg for a time, then will change to another. The animal moves with some difficulty. The bowels are usually constipated. There is little alteration of the pulse and the temperature may not be higher than normal. Chronic rheumatism is apt to improve in warm weather, especially if dry.

TREATMENT: Place the horse in a well ventilated, clean, dry, warm box stall, protect him from draughts of cold air. Give a laxative, six to eight drams of aloes in a pint of raw linseed oil. If the attack is very acute, give bicarbonate of potash or soda in from two to four dram doses. Where there is much swelling about the joints, two dram doses of salycilate of soda every four hours frequently gives relief. One-half ounce doses of nitrate of potash twice a day are excellent and will bring relief frequently. In sub-acute or chronic rheumatism, iodide of potash with tonics is especially valuable. An ounce of iodide of potash may be dissolved in twelve ounces of water, and a tablespoonful of this given three times a day. In chronic rheumatism with lameness which moves from one leg to another, a cure can often be effected by giving one-half ounce doses of saltpetre twice a day, dissolved in the drinking water.

Farcy or Glanders.

These are very probably different forms of the same disease, due to the introduction into the animal body of some specific poison. Some writers claim that the disease can rise spontaneously, but we have considerable doubt on this point, and are inclined to believe that the disease does not effect animals except by inoculation or contagion. It is extremely fatal, and when communicated to man always produces fatal results. The malignancy of the disease depends on the amount of virulence of the matter introduced, or it may depend to some extent upon the condition and ability of the animal to resist its attack. Any debilitating influences favor the development of the poison and render the animal less able to resist its effects. It is quite safe to assume that this disease cannot be communicated by means of the atmosphere, and new cases must arise from obtaining some of the poisonous material, either from the blood or some of the discharges from the nasal cavities, from the ulcers or by inoculation from the enlarged lymphatics, or from other tissues of the body.

SYMPTOMS: In chronic glanders or farcy the disease may

present so mild a form as not to be detected by a casual observer. There may be a slight discharge from one nostril, usually the left, with some enlargement of the lymphatic glands between the jaws, or a cord-like condition of the lymphatics inside of the thighs; the animal may have a rough coat, with irregular appetite, and present generally an unthrifty condition. The mucous membranes will sometimes be found to be blue, or even in more marked cases may assume a leaden hue or copper color. The discharge from the nostrils is starchy or glue-like and adheres to the nostrils. When the enlargement of the lymphatic glands presents nodules over a considerable portion of the body the animal is said to have bud or button farcy.

This is the latent form of glanders, and an acute attack may be excited by exposing the animal to some debilitating influence, such as sudden exposure to cold or a cold rain, or the administration of a lively purgative. In sub-acute cases, there are ulcers on the mucous membranes of the nose, pits may form, dropsical swellings may also appear under the jaws and along the abdomen, with stocking of the legs. The hair on the mane and tail may fall out, the coat generally will assume an unhealthy, harsh condition, the animal is weak, anaemic and easily exhausted.

In acute glanders the symptoms are much more marked. There is a rise of temperature to 103° or 104° F., or even 106°, the pulse is frequent, there is loss of appetite, with marked chills or rigors at the onset, the eyes appear swollen or inflamed and may discharge a purulent matter, the mucous membranes of the nose assume a dark, congested appearance with pits or ulcers over its surface, there is entire loss of appetite, with diffcult breathing, and even the lungs become implicated.

TREATMENT: Treatment is unsuccessful in glanders and farcy except at the very earliest stages and in the most chronic forms, where there is only slight enlargement of the lymphatic glands with general ill condition. Such cases should be treated by giving liberal food and tonics, with long continued use of iodide of potash in 10 to 20 grain doses twice a day. If, however, there is discharge from the nostrils with the characteristic pits in the mucous membranes, the animal had better be destroyed, in fact where a positive diagnosis of glanders is made the safest disposition of the animal is to destroy it. Very great care should be taken at all times that none of the poisonous discharges from the animal gain access to the attendant, as it is sure to produce fatal results.

Anthrax.

This disease is also known by the name of quarter ill or rinder pest. It is a constitutional disorder, arising in rich,

damp localities, and it occurs in swine, herbivorous animals, birds, and can be communicated by inoculation to man.

These bacilli find favorable development in low, marshy grounds; lands that overflow frequently or are covered with stagnant water are most productive of the bacilli or poison. Lands that overflow may become infected by the germs being washed down from infected districts above. The germs may also be carried by the attendant or those who handle the animal, or by small carnivorous animals, which feast upon the carcass of an animal which has recently died from anthrax or quarter ill.

SYMPTOMS: Horses are somewhat less apt to be affected with anthrax than cattle and sheep, but when developed the symptoms are as follows: The animal will appear dull and feeble, may fall prostrate, or if standing the head hangs resting on the manger, or it may stand back in the stall and rest first one foot and then the other; it may even show signs of colic. If the disease comes on suddenly while the animal is at work, there will be staggering gait, the skin is hot, and sometimes crepitates, showing the presence of gas beneath, the muscles tremble, and there is a flow of saliva from the mouth. The animal sweats, alternating with chills, the lymphatic glands are swollen, the animal is irritable and sometimes becomes unconscious, the eyes are red and blood spots may appear on the mucous membranes, the pulse is elevated and weak, with irregular respirations. The disease usually terminates in from six to thirty-six hours. Fat, strong, plethoric animals are more apt to succumb to the disease than those which are thin in flesh.

TREATMENT: The animal should be given good surroundings, and the cause of the disease ascertained, if possible, and removed, the grain should be easily digested, nutritious, and especially free from mould or smut of any kind. Carbolic acid has the power of destroying the bacilli of anthrax or quarter ill, and for this purpose it should be administered in one-half to dram doses, diluted in a pint of water. Sulphite of soda also has excellent effects, and should be given in from two to four dram doses, repeated every four hours. The hyposulphite of soda may also be given in the same way with good effects. Two dram doses of chlorate of potash dissolved in three or four ounces of water and given every four hours has given excellent results. If the animal should succumb to the disease, the carcass should be burned or deeply buried.

Azoturia or Paralysis.

Paralysis or partial or total loss of power of the hind legs frequently occurs in the horse. The disease is known as azoturia among veterinarians.

CAUSE: Rich, highly nutritious food, without exercise, produces a condition favorable to the development of this disease, and exercise after a period of idleness is the exciting cause.

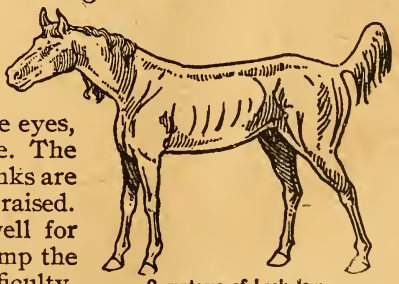
SYMPTOMS: The animal leaves the stable feeling fine and in excellent spirits, but after a short drive is noticed to hang back, become lame in one and then in both hind legs; the limbs are moved with increasing difficulty and profuse sweats break out over the neck and shoulders, then over the entire body; the animal pants and blows, with head down and ears lopped, and it is with greatest difficulty the standing position is maintained. Frequently they drop and are unable to rise, although struggling violently to regain their feet. The muscles of the hips become hard and swollen, as do the shoulders in some cases. The urine is dark and looks as if mixed with blood.

So much depends upon the owner's or attendant's ability to recognize this disease early, that it is of the greatest importance that a careful study of the conditions and symptoms should be given. The disease is almost without danger if noticed early and the horse stopped and blanketed, and no attempt made, under any circumstances, to reach the stable. Complete rest for an hour or two will enable him to reach the stable with little or no danger. Do not forget to stop when an attack comes on, and the attack will be of little moment. A physic of an ounce of aloes in a pint of water should be given at once, a small quantity of water allowed often, and light, easily digested food will bring him out all right.

Tetanus or Lock-Jaw.

Lock-jaw is a disease of the nerves that follows injuries. It is most common after punctured wounds, but frequently follows surgical operations.

SYMPTOMS: The first symptom is a little stiffness in moving, and the eyes upon sudden lifting of the head are retracted and the washer or haw is pushed outward, almost covering the eye, and it is not uncommon to have the owner seek treatment for the eyes, not suspecting the real trouble. The nose extends forward, the flanks are tucked up and the tail is raised. The animal may eat fairly well for a time, but usually they champ the jaws and chew with some difficulty.



Symptoms of Lock-Jaw.

TREATMENT: The patient should be placed in a dark stall, away from other animals and free from excitement or noise of

any kind. If the jaws are not set, a physic of 8 drams of aloes with a dram of ginger should be given. For safety, it is best given with the balling iron. If the jaws are set no attempt should be made to give medicine by the mouth. Six to eight grains of morphine with a quarter of a grain of sulphate of atropia may be dissolved in water and injected under the skin with a syringe for that purpose. If the attack is very sudden and severe, treatment of any kind is of little value; however, if the onset is slow, by proper care many cases recover.

Lymphangitis.

This is a sudden and severe inflammation, usually of the hind legs. It comes on in well fed horses after a few days' rest. It is extremely painful.

TREATMENT: Diminish the quantity of the food, give as a laxative a quart of raw linseed oil or a ball of six drams of aloes. Bathe the leg with hot water frequently, and give walking exercise as soon as the animal can move without too much pain.

Dropsy.

This is the name given to the accumulation of serum beneath the skin or in the serous cavities. It is not a disease in itself, but it is a prominent symptom of a number of disorders. It is characterized by swelling of the parts, which are not highly sensitive, but pit when pressure is applied. The most common form found in the horse is dropsy of the legs, commonly called stocking. Stocking of the leg is an indication of an ill, depraved condition of the blood, of improper circulation, or want of exercise. It is quite common in anaemia, especially when induced by a diet of watery, innutritious substances. Dropsy of the abdomen is also very frequently found in the horse. Its causes are the same as those which produce dropsy of the leg. The swelling of the abdomen or even of the sheath is frequently seen as the direct result of anaemia or poverty of the blood.

TREATMENT: Place the animal in a large box stall or in a shed, where exercise can be obtained. Give laxative food, such as bran mashes, for a day or two. Follow this with a dose of 6 or 8 drams of aloes, unless the animal is quite weak, when the physic should be withheld. The bowels should be kept active by occasional doses of 2 to 4 ounces of Glauber's salts. Teaspoonful doses of nitrate of potash three times a day will also aid the kidneys in throwing off the excessive liquids from the system.

If the swelling of the abdomen or sheath is quite extensive, punctures should be made with the point of a sharp knife, and the serum allowed to escape. Dropsical swellings may often be reduced very remarkably in this manner in the course of a few hours.

Improve the quality of the blood with bitter tonics and especially with the salts of iron. Nux vomica, quassia and cinchona, with carbonate or sulphate of iron, are the best remedies in these conditions. Horses suffering from dropsy should receive good, nutritious food, with a long course of tonics. Dr. Hess Stock Food will be found of special value in these cases, as it contains the very elements necessary to produce good, rich blood, and where the above suggestions have been followed, with regard to general treatment, the Stock Food is almost an absolute specific.

Scratches.

Scratches is the name commonly given to inflammation of the heels and back part of the legs of the horse. The disease is most common in coarse, heavy limbed animals that have a tendency to stocking of the legs, and may be caused by poor circulation, torpidity of the kidneys, washing the heels with irritating soaps, failure to wipe them dry or frequent wetting of the heels, or from irritating substances, such as filth, gases, standing in slush, snow or fetid pools.

SYMPTOMS: There is swelling of the legs, with dry heat and tenderness. The legs appear stiff and sore, and the skin frequently cracks, forming fissures. Occasionally eruptions or pustules form; in white horses the skin looks red and inflamed.

TREATMENT: Remove the cause as far as possible, avoid filth of any kind, and prevent the legs from becoming wet. If there is low circulation with tendency to stocking of the legs, laxatives should be given, such as four ounces of Glauber's salts twice a day, or a cathartic such as six to eight drams of aloes. Nitrate of potash in two dram doses twice a day will also aid in removing the swelling of the legs. The animal should have exercise in a large box stall. The food should be composed of bran and oats with carrots. Filth should be removed with a rag or soft brush. Wash in a solution of 1 part Dr. Hess Dip and Disinfectant to 50 parts of water. Repeat daily.

Grease Heel.

Grease heel is an aggravated form of scratches. The causes are the same as those which induce scratches.

SYMPTOMS: The legs become swollen, are extremely tender, and exude an offensive, oily substance which dries and forms crusts. Fissures may also form in the skin. Nodules frequently spring up. The nodules or fungus growths are covered with a dark secretion, which when removed presents a red, irritated surface.

A Bad Condition of Grease.

TREATMENT: Give the animal good surroundings, feed bran mashes and scalded oats. After a few feeds of this kind, give six drams of aloes in a pint of raw linseed oil. Follow this with two ounce doses of sulphate of soda twice a day. If this proves too laxative diminish the quantity. Give two dram doses of saltpetre in the drinking water twice a day. Remove scabs or crusts from the legs by applying warm poultices. After poultice is removed wipe the parts dry, and apply Dr. Hess Healing Powder twice a day.

Horses affected with grease heel should be given a continued course of treatment with Dr. Hess Stock Food.

Mange of the Heel.

This disease often resembles scratches, but in addition to the common symptoms there is intense itching; the animal will bite the legs and kick; scabs and pustules will form, similar to those found in scratches not due to a parasite.

Mange of the heel should be treated in general the same as scratches. In addition, ointments to destroy the parasite should be applied. One part Dr. Hess Dip and Disinfectant to 50 parts water will destroy the parasite, or oxide of zinc ointment, with which a dram of oil of tar or balsam of Peru has been thoroughly rubbed up should be applied once a day; or a dram of balsam of Peru to an ounce of sulphur ointment should be rubbed over the affected parts; or daily applications of a solution of hyposulphite of soda will destroy the parasite.

Leucorrhoea.

This is a disease of the mucous membranes of the genital organs, usually affecting aged mares. It is characterized by a whitish discharge of a muco-purulent nature. The animal loses flesh, spirits and appetite.

Causes, debility, or injuries in parturition.

TREATMENT: Give nutritious food with tonics, such as Dr. Hess Stock Food. Dissolve 2 drams of white vitriol, 2 drams of sugar of lead, with ½ ounce carbolic acid in a pint of water, and use a tablepoonful of this in ½ pint of warm water as an injection once a day until the discharge ceases. Dr. Hess Dip & Disinfectant 1 part to 100 of water injected will relieve the difficulty.

Nettle Rash, Urticaria or Surfeit.

This is a disease characterized by sudden breaking out or swellings over the skin. Elevations will form over the body resembling bee stings. They frequently appear on the neck and shoulders, occasionally on the face and eyelids. The disease appears suddenly, and is usually caused by errors in diet.

TREATMENT: Administer a physic of four drams of aloes with a pint of raw linseed oil, feed lightly of laxative food to which has been added two drams of powerful chlorate of potash twice a day.

Scaly Skin.

This is a disease of the skin characterized by dandruff or scales of a scurfy nature, which form on the skin. Occasionally pustules will form with shedding of the hair. Sometimes there is great itching.

TREATMENT: Give laxative food with two dram doses of bicarbonate of soda twice a day; or add an ounce of iodide of potash to a pint of Fowler's solution and give a tablespoonful twice a day, in a small amount of water or in the feed of grain. A dram of oil of tar to an ounce of vaseline does well as a local application.

Itching or Nervous Irritation of the Skin.

This disease is often found in horses that are overfed with grain and are confined to close, illy ventilated stables. It is usually more prevalent in hot weather. It is very frequently found in the absence of any eruption on the skin.

Treat by giving a purge of 6 to 8 drams of aloes suspended in water or given in a bolus. Follow the physic with laxative food, such as bran and oats, and give two ounces of Glauber's salts dissolved in the drinking water or dissolved and added to the feed of grain once a day. If the mane and tail are the practical seat of disease, apply common soft soap, rubbing it in thoroughly. After ten minutes, wash out clean with soft water. Three ounces of hyposulphite of soda dissolved in a pint of water, to which has been added one-half ounce of carbolic acid, is an excellent local application. It should be applied once a day.

Black Tumors.

Black tumors are frequently found in white horses, on the surfaces of the body not covered with hair, such as the under surface of the tail, the lips, the sheath or the face. They are composed of pigment, supposed to be the coloring matter from the hair.

TREATMENT: Remove with a knife, if possible; if, however, they are too numerous, or cover too great a surface, no treatment should be instituted.

Inflammation of the Bladder, or Cystitis.

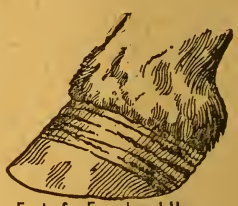
CAUSE: Inflammation of the bladder is frequently the result of over doses of diuretic medicines, such as turpentine, cantharides, or from the application of blisters over too large a surface. It may also result from sudden exposure to cold.

SYMPTOMS: The animal shows pain, with elevation of the temperature, switching of the tail and frequently voiding small quantities of urine tinted with blood or covered with mucus; walks with difficulty and assumes an irregular, staggering gait.

TREATMENT: Remove the cause, and give good nutritious food with demulcent drinks, such as flaxseed tea or pure water, or give internally the following: Steep two ounces of buchu leaves in a quart of water, add an ounce of bromide of potash, and give two ounces of this every four hours. After the acute symptoms have subsided, give two drams of sweet spirits of nitre with ten drops fluid extract of belladonna three times a day.

Founder.

Founder or laminitis is an inflammation of the feet. In acute cases the animal becomes very stiff, moves with great difficulty, and evinces acute pain. If made to back will drag the front feet, and usually stand with the hind feet well forward.



Foot of a Foundered Horse.

TREATMENT: Bleeding from the large vein of the neck or direct from the feet often brings prompt relief, especially if done early. A moderate physic of 4 to 6 drams of aloes in a pint of raw linseed oil should be given, and hot poultices applied to the feet. In laminitis following parturition in the mare, cold applications should be made to the feet. The animal should not be put to work too soon.

Inflammation of the Udder, or Mammitis.

This disease sometimes occurs in the mare. It is shown by swelling of the gland, manifestations of pain, with increased temperature and respirations.

Treat by giving a laxative; feed soft, easily digested food in small quantities; bathe the udder with warm water, after which apply camphorated oil, to four ounces of which has been added an ounce of fluid extract of belladonna. Repeat the warm fomentations and applications of the oil three or four times a day. If it occurs during a period of lactation, remove the milk frequently. If abscesses form, a free incision should be made to allow the escape of pus, and the wound cleansed by injecting a two per cent. solution of carbolic acid.

Curb.

This is a swelling at the back part of the hind leg below or at the lower part of the hock joint.

Causes are slipping, hard pulling, rearing, in badly formed hocks. In recent cases it causes lameness.

TREATMENT: Hot fomentations to remove heat and tenderness. A shoe high at the heel; later apply a blister of red iodide of mercury, one dram; vaseline, one ounce; rub together and apply. Repeat if necessary.

Spavin.

Spavin is a bony growth about the hock joint. It causes lameness and does not readily yield to treatment. A spavined hock can never be as good as one free from disease, although the lameness may be removed.

TREATMENT: Rest and blisters. The firing iron is the surest remedy, because it can be controlled in its application, and its effects go deeper. A spavin is said to be cured or killed when the diseased bones firmly unite.

Side Bones.

Side bones appear as hard, bony tumors at the back part of the sides of the feet. They cause lameness and constitute an unsoundness. They are found in heavy horses almost exclusively, and are frequently the result of standing on plank floors and high calkins. They are not easily cured.

TREATMENT: The treatment given under spavin applies as well to these. Cutting out the bony growths is now successfully practiced.

Ring Bone.

Ring bones are outgrowths of bone about the joints above the hoof. They cause lameness and constitute unsoundness. They usually yield more readily to treatment than spavins, as the joints are not so complicated.

Treatment is the same as given under spavin.

Collar Boils.

These often form on the shoulders, and are large, soft tumors, usually appearing a day or more after the horse is taken from work. They are not sensitive, and if not too large may disappear without treatment, but if very large they should be opened low down and a large opening made to allow the free exit of the bloody serum they contain. The opening in these large, soft swellings should not be less than an inch and a half in length. After the escape of the contents, by inserting the finger large quantities of broken down tissue will be found,

which should be removed and a quantity of powdered bluestone inserted to hasten the escape of the injured tissue.

Dislocation of the Patella.

The affected limb is extended backwards and the leg cannot be bent at the hock joint.

TREATMENT: Back up the horse to relax the tendon, and at the same time push forward and inward over the whirlbone. When the patella reaches its proper place the animal will walk off all right. Tie the foot slightly forward by extending a rope or strap around the neck. A strong rope or strap should not be used. Apply a blister well over the patella.

Shoe Boils.

These are tumors of the same nature as described before. They come from the animal resting with the elbow on the shoe when lying in the stall.

Treatment consists in removing the cause, and following the suggestions given under Collar Boils. These may be removed by ligature, that is by tying a string tightly around the tumor and allowing it to slough off. Treat the wound by applying Dr. Hess Healing Powder. A blister, made by rubbing a dram of red iodide of mercury well into an ounce of vaseline, applied once a week, will aid in removing any enlargement that remains after other means have been exhausted.

Capped Hock.

This is due to bruise or irritation of the point of the hock. It may be the result of kicking against the stall or other injury.

Treatment consists in removing the cause, allaying the inflammation by hot fomentations, or by the cold douche, after which apply absorbents. Tincture of iodine and glycerine, of each two ounces, applied twice a day, will aid in reducing the enlargement, or the blister given under Shoe Boil will do very nicely. The knife should not be used to reduce the swelling or to allow the escape of the serum in capped hock.

Puncture of the Foot.

Punctured wounds are those made by the thrust of a pointed instrument. In relation to their extent they are the most dangerous wounds we have. Punctures of the feet are very common in horses. They are very serious and dangerous from the frequency with which they cause lockjaw.

TREATMENT: Punctured wounds should be enlarged with the knife if too small to afford drainage. In punctured wound of the foot, the hoof or sole should be cut entirely through down to the sensitive tissue, and the foot placed in very warm water, to

which ten grains of corrosive sublimate to each gallon has been added. Protect the wound from filth and repeat the bath.

Fistula and Poll Evil.

Fistula of the withers is a contused wound, resulting from rubbing against a post or tree, ill-fitting collar; rolling upon a stone or other hard body in the field will often bruise the withers and neck so that a large, soft swelling will result.

Poll evil results from striking the head against a low doorway or stable. Possibly it may be the result of a blow of a club or fork handle in the hands of the stable-man.

Showing Seton.

TREATMENT: These two conditions differ only in location. Hot fomentations and blisters may absorb the serum; the use of the knife should be avoided, if possible, as these wounds, from the difficulty in getting complete drainage, are hard to heal. If pus forms, its escape should be hastened by poultices and the use of the knife. In all swellings where the presence of pus is determined, its escape should be hastened by an opening into the least resisting part at the lowest point. The wound should then be thoroughly cleansed with a two per cent. solution of carbolic acid; and daily applications of Dr. Hess Healing Powder should be inserted well into the wound.

Contraction of the Heels.

Contraction of the heel results frequently from high toes and calkins, neglect in trimming the hoof, want of frog pressure, etc.

TREATMENT: If possible, remove the shoes, pare the hoof down level with the frog and turn the horse to grass for a couple of months, or if wanted for every day use shoe with tips only covering the front part of the foot, giving frog pressure. If full shoe is necessary, let it be flat with bar for frog pressure.

Thrush.

Thrush is a disease of the frog and sole characterized by a very fetid discharge and deep fissures at heel and sides of the frog. It usually results from filth.

TREATMENT. Cleanse and pack with cotton saturated in a 25% solution of Dr. Hess Dip and Disinfectant. After 12 hours remove and fill the fissure with Dr. Hess Healing Powder.

Quarter Cracks.

Quarter cracks are cracks, as shown in cut, in the wall of the foot. They are best treated by removing the pressure from that part of the wall by cutting the sole out slightly, and by cutting through the wall across the crack near the top of the wall. Blisters to the coronet are often followed by improvement.

Quarter Cracks.

Sprains.

Sprains of tendons are best treated by supporting with a neat fitting bandage and rest. A liniment composed of tincture of arnica, tincture of witchhazel, of each three ounces; spirits of ammonia, two ounces; water enough to make a pint should be applied well before placing bandage. Raise the heel and shorten the toe to relax the tendon and afford relief.

Corns.

Corns result from a bruise on the sole of the foot, or they may be caused by ill-fitting shoes.

TREATMENT: Remove the pressure; pare down the horny portion of sole, and apply butter of antimony with a swab or brush.

Moon Blindness.

This disease may implicate almost every structure of the eye. It is incurable, and will eventually destroy the eye. It recurs at intervals, but is not influenced by the moon, as is generally supposed.

SYMPTOMS: The onset is sudden, usually at night, and the animal is supposed to have injured the eye by a thrust of weed or spear of hay. The eye is half closed, looks dim and blue about the edge of the cornea. Pus may form in the lower part of the chamber if the iris becomes inflamed.

TREATMENT: Give light, laxative diet, bleed from the vein below the eye, protect from strong light. Improvement will be noticed in a short time.

Should the eye remain cloudy, milky or bluish gray, with a feather, place a quantity of the following within the lower lid: Yellow oxide of mercury, three grains; vaseline, one dram; rub well together and use twice a day.

Conjunctivitis.

Conjunctivitis is an inflammation of the inner surface of the lids. It may also extend to the eyeball. It may be known by a red, irritated condition, watery discharge and dread of light.

TREATMENT: Bathe with cold water; draw down the lower lid and, with a dropper placed on the edge of the lid, inject several drops of the following: White vitriol, ten grains; sulphate of morphine, two grains; distilled water, one ounce. Use several times a day. No attempt should be made to throw the medicine into the eye at a distance of several inches as the animal will not permit it the second time.

Cribbing.

Cribbing or wind sucking is a vice. It can be prevented by buckling a strap tightly around the throat or by removing all obstacles upon which the horse may fix his teeth. Cribbers can be detected by examination of the incisor teeth, which are worn at the anterior edges.

Rockwell, Iowa, Sept. 29th, '99.

Dr. Hess & Clark, Ashland, O.

Gentlemen: I had seven sick hogs and two died. My son working for Jennings your agent advised me to try your Stock Food and it has cured three of the five left, and the other two are nearly ready to go back in a pen. I shall continue to use it for it has done good work for me.

C. J. TANNER.

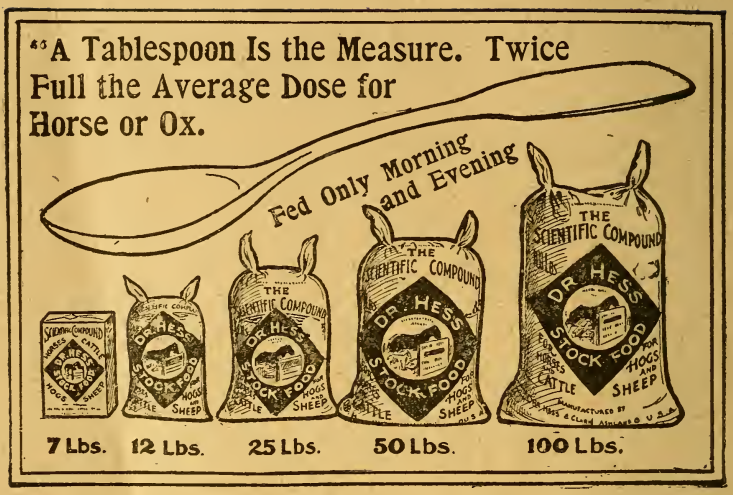
H. L. Adams, Banker and Broker of Port Berry, Ont., writes:

Dr. Hess & Clark, Ashland, O.

Gentlemen: "Some time ago I wrote you saying that I had a very nice bay gelding that was out of order and that I had used everything in the way of medicine and veterinary's advice to put him in condition, but could not do so, and on receipt of my letter you kindly mailed me a recipe for him and the directions for the use thereof, and I am very pleased to say that in a very short time my horse got in a splendid, thrifty condition, which was the result of your recipe; and I have much pleasure in thanking you for it and in saying that in June last I sold this horse for the sum of four hundred and fifty dollars, as he turned out to be a very fine horse indeed."

P. S. "I keep a bag of Dr. Hess Stock Food in my stables all the time."

Geo. W. Baney, Bart, Pa., writes: "I have been having trouble with my horse swelling at the glands. I have at present a young mare that seems to be getting the same way. The glands sometimes become swollen; she coughs at times. You will remember I wrote you some time ago about my hogs having something like the mange. I used your prescription, it was a success, it cleaned them of the scruff. If you can tell me something to cure this mare as well as you did the hogs, I would be very grateful."


"A Tablespoon Is the Measure. Twice Full the Average Dose for Horse or Ox.
Fed Only Morning and Evening
THE SCIENTIFIC COMPOUND
DR. HESS STOCK FOOD
FOR HOGS AND CATTLE SHEEP
7 Lbs.
12 Lbs.
25 Lbs.
50 Lbs.
100 Lbs.

DR. HESS STOCK FOOD

IS THE SCIENTIFIC COMPOUND FOR HORSES

IT CURES hide bound, blood disorders, indigestion, scratches and constipation. These conditions are due to an impoverished condition. The system is unable to take up and assimilate the necessary elements which form the different constituents of the body.

DR. HESS STOCK FOOD at once corrects digestion, tones up the system, improves the circulation and supplies the laxatives necessary to cause the bowels to move regularly.

IT CURES DROPSICAL CONDITION which results from failure of the blood to be supplied with proper nutrition. It becomes watery. There is a deficiency of red blood corpuscles. The watery element of the blood exudes from the vessels; the kidneys are impoverished; they fail to eliminate the water from the system which allows a double amount of water or serum in the blood.

DR. HESS STOCK FOOD promotes the secretion of the juices necessary for the digestion and contains the salts essential for absorption of the nutritious material.

IT CURES DISTEMPER OR EPIZOOTY

by throwing off the poisonous material retained in the system. Also increases the action of the bowels, aids in the assimilation of food which produces new strength, vigor and appetite.

IT NOT ONLY EXPELS WORMS BUT REMOVES THE CAUSE.

Worms and good rich blood will not exist in the same system. **DR. HESS STOCK FOOD** removes the worms, makes red blood corpuscles and tones up the system in general.

IT CURES panting due to debility, frequent urination due to high concentration, coughs and skin diseases.

IT PREVENTS flatulence and wards off diseases.

DR. HESS STOCK FOOD

Is equally well adapted for horses of all ages and under all conditions; for brood mares, for mares in foal, for colts, for stallions, etc.

DR. HESS STOCK FOOD

Is a flesh producer and can't be otherwise. Not that it contains protein or nitrogenous material; we don't claim that, but it does contain the very essential tonics that put the system to work and compel it to take care of the stuff fed, allowing no food to pass off undigested.

W. G. Rich, Bath Bridge, Gloucestershire, Eng., the great importer and owner of 1,000 acres of land, writes: "Where can I get Dr. Hess Stock Food in England? In my travels in America I find it in many stables and highly recommended by my friends."

Jos. E Truxel, Glessner, Pa., says: "I have used Dr. Hess Stock Food for horses and cattle and it is the best food I have ever used. I cannot recommend it too highly and always keep it on hand."

C. T. Smith, Chalmers, Ind., says: "I have used Dr. Hess Stock Food for the past two months and it is far superior to any stock food I ever used. It will do all and even more than you claim for it. Any one who raises stock should not be without it."

Al. H. Thrailkill, Lemsic, O., says: "I have a very high opinion of Dr. Hess Stock Food, and thank Dr. Hess for his advice on my horse."

DR. HESS HEALING POWDER

DR. HESS HEALING POWDER is the modern gall cure. It cures galls, scratches, grease heel, cuts, ulcers, burns, thrush, foul in the foot, indolent sores and open wounds of every description. It is a white smooth antiseptic powder that does not become rancid or lose its virtue.

It is better than oils, lotions and ointments, because it will not collect dust, filth and germs. It possesses all their merits without any of their objectionable features.

Whatever the nature of the wound, abrasion or gall a perfect coat is formed underneath which the process of repair is rapidly carried on.

It allays the itching, soothes the feverish condition, checks discharges and positively prevents decomposition and sloughing. Flies will not attack wounds treated with this powder.

It comes in a four ounce can which sells for 25 cents. By punching holes through indentations you have a perforated top which makes it easy to apply the powder without a particle of waste.

MANUFACTURED BY

DR. HESS & CLARK,

ASHLAND, OHIO.

CATTLE

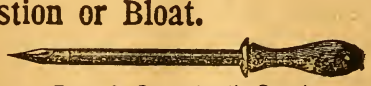
How to Keep Them

How to Treat Them

In administering medicines to cattle, the amount required is usually about one and a half times that required for horses.

In drenching the ox, the liquid should be poured into the mouth slowly, the nose should only be raised sufficiently high to allow the fluid to flow backward; if raised too high, swallowing is prevented and the liquid is apt to flow into the windpipe and cause strangulation. This difficulty is frequently experienced in cows suffering from coma or insensibility in such cases as parturient apoplexy.

Acute Indigestion or Bloat.



Trocar for Puncturing the Paunch.

Acute indigestion in the ox results from taking undue quantities of food, especially foods that are mouldy or musty or improperly cured; from drinking large quantities of cold water, or from eating large quantities of grass, especially clover, that is wet or covered with dew or frost.

Symptoms: The animal will appear uneasy, with loss of appetite and anxious look; the temperature remains normal, there may be eructations of gas with portions of partially masticated food, slavers drip from the mouth, and when associated with great distention of the rumen with gas is known as tympany or hoven. The animal now shows great distension on the left side; tapping with the finger emits a hollow, drum-like sound, the breathing becomes frequent and quick, the animal has a staggering gait, and may die from suffocation caused by encroachment of the paunch upon the lungs.

TREATMENT: Avoid the causes of indigestion as far as possible. Wet grass or decomposed food especially should be forbidden. Give an ounce of bicarbonate of soda in a pint of water, or an ounce of turpentine added to a pint of raw linseed oil, or aromatic spirits of ammonia in two ounce doses with one-half pint of water often gives relief. Four ounces of hyposulphite of soda in a pint of water is also excellent treatment. If this treatment does not bring speedy relief, the trocar must be resorted to. It should be introduced on the left side at the fullest point. If no trocar is at hand, the blade of a sharp knife should be thrust through the skin into the paunch, and a large quill or other hollow instrument should be inserted to allow the escape of gas. The tube or canula can be kept in position for several hours if gas reforms. Improve the digestive organs by the administration of bitter tonics, such as quassia, cinchona, gentian and nux vomica. Dr. Hess Stock Food can always be depended upon to improve the organs of digestion.

In calves indigestion and flatulence are quite common. It is the result of feeding undue quantities of milk after fasting, or it may result from feeding sour or partially decomposed milk, or milk in which there is too great a quantity of acid. It sometimes results from the dam becoming overheated, or in older calves it may be the result of eating undue quantities of grain or vegetables, especially if partially decomposed.

TREATMENT: Remove the cause as far as possible, and prevent its recurrence. Give a laxative of 4 to 6 ounces of raw linseed oil, castor oil, or four ounces of Epsom salts. If pain is great with considerable flatulence, 1 to 2 drams of laudanum with one-half ounce dose of aromatic spirits of ammonia should be given in one-half pint of water; or a teaspoonful of common baking soda can be added to the oil or given dissolved in water. A dram of subnitrate of bismuth on the tongue is also good. If this treatment gives no relief, the trocar and canula should be employed same as recommended for the ox. After recovery the animal should be given easily digested food, such as hay tea with gruels.

An excellent preparation for the calf can be made by steeping four pounds of finely cut, clean hay in three gallons of water for an hour, remove the hay then add three pounds of middlings, one pound of flaxseed meal and two tablespoonfuls of Dr. Hess Stock Food; allow this to simmer for one-half hour longer, then add sufficient water to make the original quantity. Two or three quarts of this can be given twice a day with other foods to great advantage. It is very nutritious and almost as easily digested as milk.

Impaction of the Rumen.

This disease results from the animal eating too large a quantity of coarse, bulky, innutritious food; from insufficient supply of water; woody timothy hay or straw in too great a quantity.

TREATMENT: Give the animal a pound of Epsom salts with an ounce of common salt dissolved in two gallons of warm water; add a pint of cane molasses; drench slowly. Gently kneading the paunch with the closed fist will break down the mass and aid in its removal. If the salts do not have the desired effect, that is, break down that hard mass in the paunch in 10 or 12 hours, the dose may be repeated; if still unsuccessful, ruminatomy or cutting into the paunch and removing the offending material must be resorted to. This, of course, can only be done by a competent veterinarian, but if done early and skillfully is quite successful.

Loss of Cud.

This is not a disease, but is a symptom of derangement of the stomach. It shows that the stomach does not perform its function in regurgitating the food to be re-masticated.

TREATMENT: Give only a limited amount of easily digested food, such as bran, oats, carrots; administer bitter tonics such as cinchona bark, quassia, or better, give a continued treatment of Dr. Hess Stock Food.

Constipation.

Constipation results from the same causes which produce impaction of the rumen, although carried to a somewhat less degree.

TREATMENT: Discontinue the use of large quantities of coarse, innutritious food, and give laxative food, with a supply of roots, such as carrots and beets, with well salted bran mash or scalded oats. Two or three ounces of Epsom salts dissolved in water and added to the feed of grain can also be employed to good advantage. Follow with bitter tonics. Dr. Hess Stock Food is an excellent laxative tonic.

Diarrhoea.

Diarrhoea in the ox may be caused by sudden change from dry feed to succulent, tender grasses; or eating undue quantities of fruits or vegetables, such as apples, potatoes, turnips or cabbage, especially if acid or partially decomposed; from drinking undue quantities of cold, stagnant or filthy water; from musty grain or from sudden overfeeding of grain of any kind.

In calves it may be the result of taking undue quantities of milk, especially the first milk of the dam, which is extremely

laxative; or the calf may suffer from diarrhoea when the feed of the mother has been suddenly changed from dry food to grass, from getting too great a quantity of milk at long intervals or giving milk that is excessively sour or acid, or from giving irritating, indigestible material.

TREATMENT: In the ox or cow, seek carefully for the cause and remove it, if possible. If some irritating substance has been eaten, a dose of physic should be given, such as one pint of raw flaxseed oil, to remove the irritating substance from the bowels. After this give alkalies with astringents, such as powdered chalk in one-half ounce doses, with thirty grains of powdered opium, and a dram of powdered catechu can be given every 4 to 6 hours. Demulcent drinks should also be employed, especially if there is considerable irritation of the mucous membranes of the bowels, as shown by mucous discharges. Half pint doses of lime water in a pint of water every four hours is also good.

For diarrhoea in the calf, give 2 to 4 ounces of castor oil, and follow with dram doses of bicarbonate of soda with one-half ounce doses of paregoric. Diarrhoea resulting from large quantities of sour milk can be best treated by adding two drams of bicarbonate of soda to each feed of milk, or administering twenty grains of subnitrate of bismuth with a teaspoonful of prepared chalk and a teaspoonful of powdered charcoal. Give every 4 to 6 hours.

Choke.

Choke is the lodgment of some foreign body in the swallow.

TREATMENT: An ounce of sulphuric ether in a pint of raw linseed oil or lard will sometimes bringrelief. If thedrench is returned through the mouth or nose, the foreign body still remains. The next thing is to remove it by the aid of a probang. A piece of ¾-inch rubber tubing 6 or 7 feet long, well oiled, will answer the purpose very well. The animal should be in a stall and the head extended straight with the neck. A soft board two inches wide with a hole bored through it should be placed on its edge between the jaws. The tube can be passed through the hole and down the swallow. Care must be taken not to injure the soft parts. When the object is reached, push it down gently till it reaches the stomach. Oil may be poured through the hole in the tube to facilitate its passage to the paunch. Stiff, rough, resisting bodies, as a whip, should not be used, from the danger of penetrating the oesophagus (swallow).

Ordinary Method of Passing the Probang. (Simonds.)

Inflammation of the Udder or Mammitis.

This is a condition found in deep milkers after calving. It follows over-congestion of the mammae or milk glands from overfeeding or neglect in taking the milk. It also may be a result of injury to the udder, or follow in a well-fed animal when turned to pasture.

TREATMENT: The treatment should be directed to checking the fever, allaying the pain and reducing the gland to its natural condition. For this purpose nothing equals Dr. Hess Distemper, Fever and Cough Remedy. A physic of Epsom Salts, a pound dissolved in a half gallon of water, should be given without delay, unless the bowels be loose. Twenty drop doses of tincture of aconite with a half ounce of sweet spirits of nitre and one-half to a dram of fluid extract of belladonna may be given every four hours. Give between these doses thirty grains of iodide of potash in half pint of water. Strong food should be withdrawn if the appetite chance to be fair. The cow should be milked several times a day and the udder bathed with warm (not hot) water. Oil the inflamed gland with camphor and lard, or lard in which jimson-weed leaves have been fried, or use the following: Vaseline, three ounces; extract of belladonna, two drams; mix and apply twice a day. Continue for several days. Discontinue aconite and iodide of potash treatment on second or third day. When the acute symptoms are over, give Dr. Hess Stock Food to restore her lost tone.

Economy does not consist in stinting your cows in their proper food, nor in "stuffing" an animal that is out of condition, but first improve their condition with Dr. Hess Stock Food and prepare them for the proper assimilation of what they eat.

Closing of the Milk Duct.

The milk may be drawn by introducing a silver tube (milk siphon) for that purpose. The tube should be removed and cleansed after milking. It may be necessary to use the tube several days before the duct will remain open. A solid probe or a knitting needle should never be used, as the milk cannot escape when it is in position and the canal closes as soon as it is withdrawn.

Fistula of the Teat.

Teat Siphon.

If the canal is the result of a cut or puncture and requires immediate treatment, a teat siphon (self-retaining) should be inserted and allowed to remain; after the sides of the wound are trimmed with a sharp knife and washed with a two per cent. solution of carbolic acid, the edges should be

brought together and stitched with a fine carbolized violin or guitar string. It is not necessary to remove the stitches, and if done well, healing will be very rapid. The teat siphon may be removed in a day or two and only replaced at milking hour. In treating fistula not due to injury, operate when the cow is "dry."

Ring Worm.

Ring worm frequently affects cattle about the eyes, neck and even other parts of the body.

TREATMENT: The parasite may be destroyed by a thorough application of lard and sulphur, oxide of zinc ointment, sulphurous acid, or a saturated solution of hyposulphite of soda, or still better 25% solution of Dr. Hess Dip and Disinfectant.

Milk Fever or Parturient Apoplexy

This is a disease peculiar to parturition or calving. It is not a fever, as is generally supposed; the rise of temperature to 101 or 2° F. is always favorable.

SYMPTOMS: The cow appears a little weak or unsteady in the hind quarters, has difficulty in rising, forgets her calf, the secretion of milk is suspended, she staggers and falls, and is unable to rise, her head is thrown to her side and she becomes unconscious. Cows most subject to it are deep milkers, fat animals, about the third calf, after an easy, natural birth.

TREATMENT: Nux vomica or strychnine has given us best results. Tincture of nux vomica in from 2 to 4 dram doses may be placed on the tongue every two hours. If twitching of the muscles is shown, decrease the dose. The urine should be drawn with the catheter. The rectum should be emptied by copious injections of warm water.

A physic is dangerous to administer and almost useless, as the animal will have died or recovered before a physic could operate.

The iodide of potash in parturient apoplexy is now being employed quite successfully. One hundred and fifty grains of iodide of potash should be dissolved in a quart of boiled water. Then one-fourth of this should be injected, at the temperature of the blood into each teat. Bag should be thoroughly kneaded immediately after injection. Injections should be repeated in twelve hours if the animal has not improved. Before using injections, the udder should be thoroughly cleansed with carbolized water or one to one-thousandth solution of bichloride of mercury. All the milk should be completely drawn. Under the udder should be placed a clean sack or rubber apron.

The instrument used for this purpose consists in a long rubber tube, 7 or 8 feet long, armed at one end with a teat siphon. In the other end should be placed a small funnel.

Then the teat siphon should be inserted, and the funnel raised and the liquid poured in, slowly. It will enter the udder by gravitation. The instrument must be thoroughly cleansed before using.

If the temperature rises or the rectum fills with fecal matter, it is a very favorable indication. Prevention is better than cure in these cases, as the disease is extremely fatal.

Method of Injecting Into Teat.

Light, laxative feed for two weeks before calving with plenty of exercise, wards off attacks.

Lump Jaw.

Lump Jaw is the name applied by farmers and stockmen to a growth of a hard nature frequently situated on the lower jaw of the ox, although the enlargement may appear on other portions of the body. The disease is due to a vegetable parasite called the actino mycoses, which may be communicated from one animal to another under very favorable circumstances, although it is not considered extremely contagious.

Tumor on the Lower Jaw.

TREATMENT: The iodide of potash treatment suggested in our former issue has been found to be very successful. The dose administered should be about one-fourth dram to each hundred pounds weight of the animal treated; thus the proper dose for an animal weighing eight hundred pounds would be two drams. It should be given once a day in a pint of rain water. It can be given by dividing two ounces of powdered iodide of potash into eight powders; when required for use dissolve one of these powders in a pint of water, and drench. Continue this treatment for one week, discontinue for one week and repeat as before until disease disappears. The effects of the medicine will be shown by discharge from the eyes and nose, by scurfy formations on the skin, the appetite may become somewhat impaired and the bowels constipated. If given to milk cows the quantity of milk is usually decreased.

Good, nutritious food should be supplied at all times during treatment. During the second administration of the iodide the dose can be slightly diminished, after the animal has fully come under its influences. Give Dr. Hess Stock Food to sustain the general health of the animal.

Abortion in Cows.

If the fetus is expelled before the offspring can be sustained by food, it is called abortion. If after this period, up to the full time, it is called premature delivery. The usual period when abortion occurs is between the fourth and seventh months, although it may happen at any time. The cause, when not of an epizootic nature may be attributed to unsanitary conditions, to injuries, badly prepared foods, grains containing ergot, or the administration of a sharp cathartic, exposure to cold and especially to debility.

If isolated cases occur, the recurrence of the accident may be prevented by supplying the animal with good, nutritious food, giving good, hygienic surroundings, and keeping the animal free from excitement. Bitter tonics with laxatives, both of which are supplied in Dr. Hess Stock Food, are also of great advantage. Cows suffering from debility will be greatly benefited by this food.

Malignant Catarrh.

This disease is characterized by acute inflammation of the mucous membrane of the nose and often of the larynx and pharynx. It is found in low, wet grounds, especially during wet weather and cold nights.

SYMPTOMS: The animal may have slight diarrhoea followed by costiveness; the hair is rough, the animal will appear cold, and shiver; the eyes are red and sunken and frequently a discharge appears, with dry muzzle, hot mouth, driveling of saliva, the breathing becomes hurried and is accompanied with cough.

Mallgnant Catarrh. First Stage.

After twenty-four hours, there is a discharge from the nose, the mouth is covered with blisters, from which the skin peels rapidly, and the appetite is lost.

From the fourth to the sixth day, ulcers appear on the nose, the diarrhoea becomes aggravated, and the breath is very fetid.

TREATMENT: Disinfect with Dr. Hess Dip and Disinfectant. Give a pint of raw flaxseed oil with an ounce of laudanum. Follow with ounce doses each of sweet spirits

of nitre and liquor subacetate of ammonia in a pint of water three times a day. A mouth wash should also be used twice a day, composed of an ounce of chlorate of potash with an ounce of powdered golden seal in a pint of water. Sufficient should be applied to thoroughly moisten the diseased parts. Steaming of the nostrils also brings relief. This can be done by scalding a gallon of oats and adding a teaspoonful of carbolic acid; put in a sack and place the nose therein, so that the steam will be inhaled.

Good, nutritious food should be given, such as oats and corn chopped, with bran, roots and carrots.

Epizootic Abortion in Cows.

As this word indicates, a great many cows in some districts become affected. The disease becomes contagious, and is due to minute microscopic bacilli which are found in great numbers in the discharges following abortion. Some writers also attribute the disease in part to sympathy or excitement.

TREATMENT: If this disease becomes epizootic or enzootic, cows and calves should be removed as soon as possible from those affected. They should be kept quiet and disinfectants used thoroughly and frequently. For this purpose a pound of crude carbolic acid in two or three gallons of water should be sprinkled thoroughly about the cow shed. All discharges should be burned or deeply buried, and the stall should be covered with air slaked lime. The shed should not again be used for cows until it has been thoroughly disinfected and whitewashed. Dr. Hess Dip and Disinfectant is a cheap and a very effective disinfectant.

Sore Throat.

Sore throat results from inflammation of the mucous membrane of the larynx and pharynx.

It may be simple inflammation due to exposure, or to sudden changes in the temperature, or sudden cooling off after a drive; or it may be a symptom in certain specific diseases, such as diphtheria, influenza, strangles or distemper. It is characterized by difficult swallowing, the ox will evince pain and will protrude the nose. If the larynx is affected, the breathing will be difficult, even rasping or roaring.

TREATMENT: Give the animal good surroundings, place in a well ventilated, dry stable, and protect from draughts of cold air. Steaming the nostrils the same as for catarrh often brings relief. A laxative dose of Epsom salts should be given, 4 to 8 ounces. Dram doses of muriate of ammonia with dram doses of powdered golden seal should be given, shaken up with one-half pint of water. Counter-irritants should also be applied to

the throat; equal parts of lime water, linseed oil and turpentine is an excellent ointment for this purpose. If the breathing becomes very difficult and there is danger of suffocation, the windpipe should be opened and a tube inserted.

Pneumonia or Inflammation of the Lungs.

This disease in the ox is shown by sudden chills, staring coat, there may be discharge from the eyes, increased respirations. The temperature rises to 104 or 5° F., the pulse too becomes more frequent, the appetite is impaired or entirely absent, there is marked thirst, the ear placed to the sides shows the absence of the normal murmur and tapping with the fingers emits a dull sound, and the animal will lie down a great part of the time.

TREATMENT: Give the animal good surroundings and clothing to make comfortable, supply with plenty of fresh air, avoid draughts; give two ounces of spirits of mindererus with one-half ounce of sweet spirits of nitre every four hours; encourage the animal to eat by giving tempting food; if appetite is greatly impaired, give two dram doses of tincture of nux vomica three times a day. When the animal begins to improve, administer tonics with good nutritious food. Dr. Hess Distemper, Fever and Cough Remedy will be found very beneficial in these cases.

Hoose.

This is a parasitic disease affecting calves and foals. It produces inflammation of the bronchi. There is a cough with difficult breathing and other signs of bronchitis. The coat becomes rough and the animal is much reduced in flesh. If the matter coughed up is closely examined, it will be found to contain numerous worms, either singly or rolled up into a mass.

TREATMENT: If pastures are known to be affected with the parasite, calves and foals should not be permitted to graze over them. The lands should be plowed up and cultivated in the hope of destroying the parasite, and the lands should be thoroughly drained. Those diseased should be kept away from the healthy ones. The carcasses of those that have died should be deeply buried or better, burned.

Animals affected with parasitic bronchitis or hoose should be liberally fed with good, nutritious food, such as flaxseed cake, roots, corn and oats, with good, clean hay; or hay tea can be supplied to great advantage (see page 48). The animal should be made to inhale sulphur fumes for one-half hour at a time and for several days in succession. Dr. Hess Colic Remedy gives splendid results in these cases. The gasoline treatment, recommended for stomach worms in sheep, is also worthy of

a trial. Rock salt should be kept before the animal at all times.

Rheumatism.

This is a disease which is quite common in the ox, and is frequently found in those exposed to damp, cold air or housed in illy ventilated, damp stables, or compelled to graze and sleep on low lands where the grounds are damp and the vegetation innutritious.

SYMPTOMS: The disease is shown by swelling of the joints, possibly both knees or both hocks, with stiffness; the joints are tender and hot, the animal will lie down a great deal and can rise with difficulty.

TREATMENT: Give good surroundings, especially where it is dry and warm. Give a laxative of 8 to 16 ounces of Epsom salts in a gallon of warm water. Follow this with one-half ounce doses of nitrate of potash twice a day, given in the drinking water or dissolved in water and added to the feed. One to two dram doses of powdered colchicum seed is also highly recommended.

Anaemia.

Anaemia in the ox is so common that it should not be overlooked. The general characteristics and causes of anaemia are given previously in this book, page 27, under the chapter given to diseases of the horse. The disease, causes, symptoms and treatment are the same, which see.

Paralysis, Following Parturition.

After calving and occasionally before this period, cows are often found to have partial or complete loss of power of the hind legs, the limbs are weak and are moved with difficulty, or the animal will lie prostrate, unable to rise. The difficulty is due to atony of the nerves, and should not be confused with parturient apoplexy.

TREATMENT: Give good, nutritious food, with two dram doses of tincture of nux vomica three times a day, rub the legs briskly, and apply compound soap liniment. A liniment composed of equal parts aqua ammonia, turpentine and linseed oil is excellent. Apply to spine and rub briskly. A quart of raw oil is useful if cow is constipated.

Retention of the Placenta or Afterbirth.

In a general way in the ordinary cases of retention, a dose of cathartic medicine will often cause its expulsion; add eight ounces of Epsom salts, one ounce of aromatic spirits of ammonia and an ounce of powdered ginger to a pint of water and give at once.

If this with gentle traction does not have the desired effect, it should be removed by a competent veterinarian, and the parts should then be thoroughly washed out with a gallon of warm water to which has been added one-half ounce of carbolic acid. Care should be taken that all the membranes be removed; if retained, there will be a slow form of blood poison, which can only be overcome by frequent injections of warm water containing one per cent. carbolic acid.

Foot and Mouth Disease.

This is a contagious disease characterized by irritation of the feet and blisters forming about the mouth, udder, teats or other portions where the skin is soft and tender. It can be communicated by contagion. It is found in all cloven footed animals, and can even be communicated to man.

Lower Jaw of Cow in Rinderpest.

SYMPTOMS: Roughness of the coat, shivering, increased temperature, soreness between the claws with lameness, inclination to lie down; after several days blisters arise, covering the whole interior portion of the mouth, the teeth and digits become loose, saliva drips from the mouth. Swine champ their jaws, and sheep may often lose their hoofs.

TREATMENT: Give a laxative of Epsom salts, to the ox, a pound; use astringents, and mouth washes, such as borax or boracic acid or tannic acid, an ounce of the former with two drams of the latter in a quart of water. But better still wash the diseased parts and disinfect thoroughly with Dr. Hess Dip and Disinfectant. Apply in the mouth, also to other portions of the body which are diseased. Dirt should be removed from the claws, and the application of an ounce of oil of vitriol and four ounces of water should be made with a feather.

Casting the Withers.

This accident usually occurs in cows that are overfed on bulky, innutritious food, in which case the tissues of the body become loose and flabby, or by compelling the animal to stand in a stall which slants much backward.

TREATMENT: Limit the amount of coarse food, give more concentrated food, incline the floor of the stall forward, wash the protruded parts clean, and apply a lotion made by dissolving one-half ounce of powdered alum with an ounce of laudanum in a pint of water. A truss can also be applied in some cases to advantage.

Cow Pox.

This is a self-limited, irritative disease which usually at-

tacks the udder and teats. The udder becomes heated and tender, there is slight elevation of the temperature, with red nodules, about the size of a pea, which about the sixth or tenth day form vesicles. The vesicles soon become yellow in color and contain pus, the whole mass dries up, leaving a hard crust or scab. After the blisters are ruptured, raw sores form, often proving difficult to heal.

Cow Pox—Variola Vaccinæ.

Treatment is seldom necessary. A mild laxative of Epsom salts should be given. The vesicles or pustules should not be ruptured, and in milk cows the teat siphon should be used. If ruptures form, apply twice a day oxide of zinc ointment to each ounce of which has been added a dram of oil of tar; or an ointment made from rubbing up one-half dram of boracic acid and ten grains of tannic acid in one-half ounce of vaseline should be applied twice a day.

Bloody Milk.

Bloody milk is caused by rupture of minute vessels in the udder or mammary gland, due to irritation or inflammation. See treatment for Mammitis. The same treatment in these cases brings good results.

Warbles.

Warbles are nodules or lumps which form along the back of the ox. They contain the larvae of the gad fly.

They can be removed by seizing the skin well under them and squeezing them out through the orifice, or they can be broken down by the introduction of a needle. A few drops of gasoline dropped into the orifice with a dropper will kill the parasite. They should be squeezed out after two days.

Epizootic Ophthalmia.

This disease frequently attacks several herds of cattle or flocks of sheep in certain localities in any season without any apparent cause.

The symptoms are those of severe inflammation of the eye with fever. The eye becomes cloudy, there is an exudation within the cornea, and even ulcers may form on the surface of the eye and sometimes extend through, allowing the humors of the eye to escape.

TREATMENT: Separate the sound from the diseased animals, and also from the buildings or districts that diseased animals have previously occupied. Give those affected a full dose of salts, a pound to a pound and a half, followed by two

ounces of sweet spirits of nitre twice a day in a pint of water. Place animal where it is dark, keep quiet, dissolve two drams of boracic acid in four ounces of warm water, add ten grains of morphine, and use this as an eyewash twice a day. Sheep also become so affected, and should have the same treatment.

Foul in the Feet.

This is a disease of cattle, and may assume almost any degree of severity from a simple crack or abrasion between the claws to suppuration, separation of the horn from the foot or to decay of the bone.

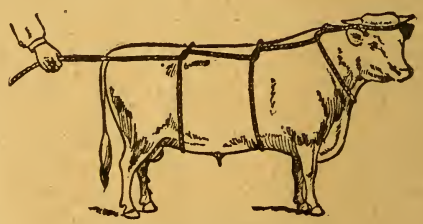
TREATMENT: If the case is simple and unattended with pus under the hoof or horn, the dirt should be removed and Dr. Hess Healing Powder applied. If matter has formed, the hoof should be removed sufficiently to allow its escape and a poultice should be applied. After the poultice is removed, apply the Healing Powder to the diseased parts. The foot should be kept clean, the bowels active, and the general health looked after. Bitter tonics are very useful, such as dram doses of nux vomica and a half ounce of gentian given twice a day. Dr. Hess Dip & Disinfectant is a perfect antiseptic for dressing and curing all such ailments.

To Prevent Kicking.

Tie a rope around the cow just in front of the udder. Have the rope fit snugly, but do not draw too tight.

To Cast a Cow.

If it should be desired to throw a cow or ox, it may be done without danger or injury by taking a long rope and making a loop (not a slip noose) and placing it around the neck. Pass it backward and make a turn once around the body just back of the front legs. (See cut). Pass the end under the rope as it comes from the neck; pass the rope back to near the middle of the back and make another turn round the body. Make another turn just in front of the hind legs; carry the end of the rope back behind the cow and pull steadily, and the animal will lie down.



Rueff's Method of Throwing an Ox.

Anthrax, Quarter Ill or Black Leg.

This is a disease which frequently affects young cattle. It often kills suddenly, but there is generally some external indi-

cation of the disease. The animals affected are frequently those which are taking on flesh rapidly and are looking well, but this alone does not produce anthrax, as some stock raisers suppose. The presence of the germ of anthrax is necessary to the development of this disease. The causes are the same as those which produce it in the horse. See page 31.

SYMPTOMS: The animal becomes listless, the eyes are depressed and much reddened, the ears lop, there is some tenderness about the loins and ribs, the pulse is irregular and there is an increased number of beats, the mouth is hot and dry; in the course of a day or even of a few hours enlargements may appear on the loins, back, brisket, head or other parts of the body; the animal becomes lame and moves with difficulty, lies down frequently and is unwilling to rise; there is considerable torpidity of the bowels with entire loss of appetite; the animal fails to chew the cud, and the swellings when pressed upon emit a crepitant or creaking sound showing the presence of gas beneath the skin. There may be convulsions, the animal becomes unconscious, the eyes fixed, and the animal frequently dies without a struggle. The disease may also assume a somewhat more chronic form, the animal will lose flesh and become hide bound, there is stiffness of the joints and slight elevation of temperature, irregularities of the bowels, hot skin and staring coat, and if no treatment is given and the diet is not changed the disease may assume a more acute form and death follow in a short time.

TREATMENT: Ascertain, if possible, the source of infection or cause of disease and remove it. It is always safe to change the feed in these cases. If pastured on low lands they should be removed to high grounds; if given hay or fodder from infected districts change to upland hay.

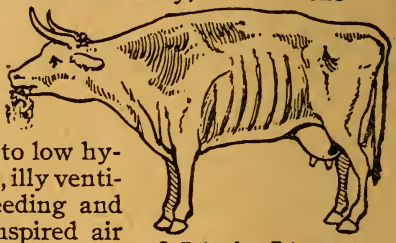
Carbolic acid has been used with success; it should be given in one-half dram to dram doses for adults; calves take from 5 to 20 drops, well diluted in water to avoid its irritating effects. It should be given three times a day. Sulphite or hyposulphite of soda also has good effects, and is highly recommended. It should be given in 4 to 6 dram doses every four hours. It can be given in connection with carbolic acid in solution, well diluted.

Inoculation with the attenuated virus of anthrax has been successful in preventing this disease. It is largely practiced in some districts, but should be done under the supervision of a competent veterinarian only.

Tuberculosis.

Tuberculosis is a disease which is characterized by the deposit of tubercules in the different tissues of the body. The

tubercules are generally composed of a cheesy substance; they may be very minute or attain considerable size. They may also be found in almost any tissue of the body, such as the lungs, lymphatic glands, intestines, muscles, liver, pancreas, kidneys, mammary gland, and other tissues.


Suffering from Tuberculosis.

CAUSES: The causes of tuberculosis can frequently be traced to low hygienic surroundings, such as damp, illy ventilated stables, overcrowding, inbreeding and from inoculation, or even from inspired air containing the bacilli of tuberculosis. It can be transmitted from the parents to the offspring. The disease affects almost all domestic animals, as well as man.

SYMPTOMS: Tuberculosis is usually not rapidly fatal. The disease may be present for months without any appreciable symptoms. Animals that were in prime condition when slaughtered have been found to contain tubercules. The animal may show some loss of condition, with roughness of the hair, tenderness upon pressure upon the back and loins; there may be present an occasional cough, especially in animals changed from a warm stable to a cold atmosphere, the appetite may remain good. If a cow, the secretion of milk is sometimes diminished, becomes bluish in tint and contains less fat. The udder may also show signs of disease by presenting hard nodules under the skin, the temperature may remain normal; if the bowels are affected there may be diarrhoea alternating with constipation. If the lungs are affected for the greater part the cough will be more marked, pressure upon the sides of the chest will give the animal pain. As the disease progresses these symptoms become more marked, the animal becomes poor and emaciated, the movements very sluggish, the eyes look dull, the skin is dry and covers the ribs closely. Slight exercise produces laborious breathing and exhaustion, the mucous membranes of the mouth are pale and yellow, the appetite is impaired, the organs of digestion are weakened, and flatulence or bloating is frequently seen. Cows frequently abort, the milk becomes diminished in quantity, the cough becomes more persistent, the discharges from the nose are viscid, and the breathing is quick and interrupted. Later on the cough becomes very distressing, the back is arched, the head is allowed to protrude, the mouth is partially open and the tongue pendulous, especially if the lungs are the principal seat of disease. The horns and ears become cold, the breathing may be accompanied by moaning, the animal suffers from

diarrhoea, the paunch often becomes distended with gas, pressure on the sides or tapping the chest causes pain. Dropsy of the abdomen frequently supervenes, ulceration or breaking down of the tubercules may occur, especially of those in the udder and lymphatic glands, forming unhealthy ulcers.

A diagnostic point of great value now is the hypodermic injection of tuberculin. If tuberculosis is present, there is always a rise of temperature 3, 4 or even 5°, the animal shows uneasiness with increased breathing. If the animal has not tuberculosis the injection of the tuberculin does not cause any or at most very slight disturbance. Before such test is made, it is necessary to take the temperature at least twice during the twenty-four hours prior to the use of the drug. The use of tuberculin in the diagnosis of tuberculosis is of great value, but should be used only by a competent veterinarian.

TREATMENT: The chances of success in treating a case of well established tuberculosis are not sufficient to warrant a line of treatment. The danger of communicating the disease is increased by harboring such animals, and if a positive diagnosis of tuberculosis has been made the sooner the animal is slaughtered the better it will be for the other members of the herd. There are a great many animals, however, affected with tuberculosis in a very slight form whose milk and flesh are used with impunity. Just at what point the disease may be considered dangerous has not been fully determined, but if any local manifestations of tuberculosis are present (such as the enlargement of the lymphatic gland, nodular formations in the udder, with cough and general loss of condition), the milk and flesh of the animal should be rejected.

General disinfecting with a solution of Dr. Hess Dip and Disinfectant should be done around the premises whether disease is present or not. It kills the germs and deodorizes barns, chicken yards, cow stables, sink drains, etc.

DR. HESS STOCK FOOD

IS THE SCIENTIFIC COMPOUND FOR CATTLE

IT increases the appetite, aids assimilation, gently stimulates the kidneys, regulates the bowels, increases the secretion of the liver, prevents flatulence and loss of cud.

DR. HESS STOCK FOOD

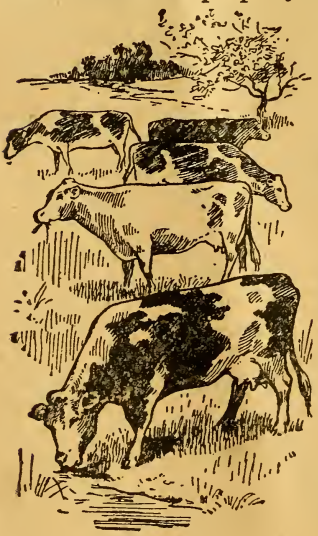
is particularly profitable for the cattle raiser.

Every dollar put into this food will come back and bring a bigger profit with it than any other dollar the cattle raiser can spend.

This food makes the other foods—the hay and the grain and the grass and the fodder—digest properly and yield the greatest quantity of milk and flesh.

It increases the appetite but it does not follow that by feeding this food the animal requires more grain to sustain life.

The fact that the appetite is increased is evidence that the food has been properly appropriated and assimilated, and opens the gate-way for heavier feeding at a greater profit.



We ask you to make a practical test of

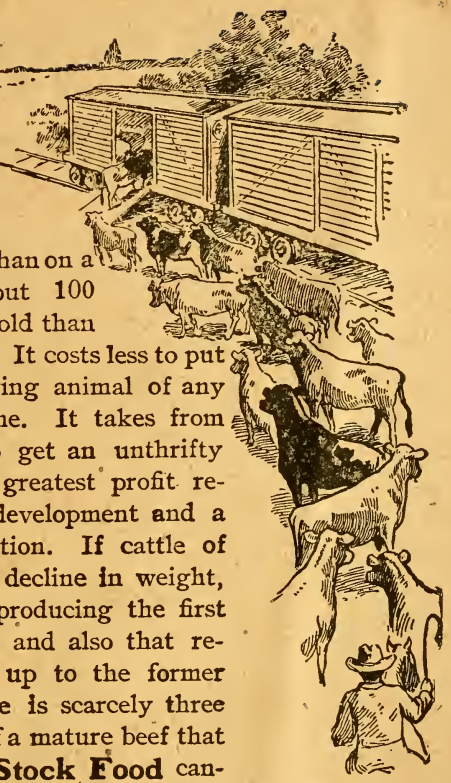
DR. HESS STOCK FOOD

It will verify our claims.

This food is splendid to whet up the appetite, which frequently becomes impaired when finishing cattle for market. It keeps them right up on their appetite to the very last day.

It produces the sleek, glossy coat, that finishing touch that commands the fancy price.

The rule of early development applies to cattle as well as to other stock fed for market. Tests show that it costs less to put 100 pounds upon a calf than on a yearling, less to put 100 pounds upon a yearling than on a two-year-old, less to put 100 pounds upon a two-year-old than on a three-year-old, etc. It costs less to put 100 pounds upon a thriving animal of any age than an unthrifty one. It takes from thirty to sixty days to get an unthrifty animal to thrive. The greatest profit results then from early development and a constant thriving condition. If cattle of any age are allowed to decline in weight, the food consumed in producing the first point of greatest weight and also that required to bring them up to the former standard is lost. There is scarcely three months during the life of a mature beef that grain and **Dr. Hess Stock Food** cannot be fed at a decided profit.



FOR CALVES

Dr. Hess Stock Food prevents indigestion, flatulence, fermentation, aids assimilation and produces a rapid, healthy growth.

J. H. Finley, Bainbridge, Pa., says: "We have used Dr. Hess Stock Food for two years with great satisfaction. It improves stock more than any food I have ever used, and I have used different kinds for at least twenty-five years. I consider it the best stock food made."

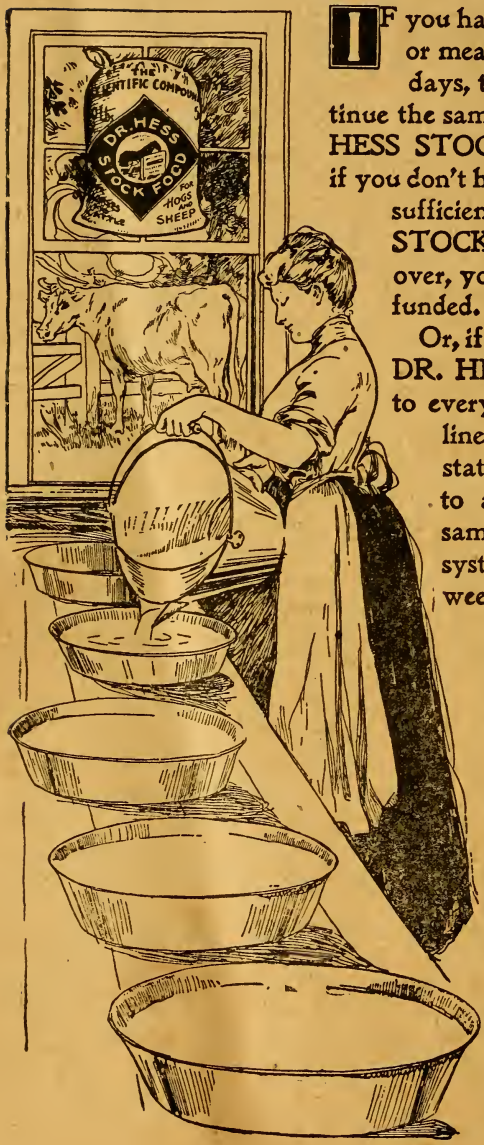
C. E. Varney, Pharmacist, Dover, N. H., says: "We find our customers are duplicating their orders now, which shows they appreciate Dr. Hess Stock Food."

J. C. Etters, Oak Hall, Pa., says: "We have used Dr. Hess Stock Food and can recommend it. It pays for itself many times in saving feed. It is the best stock food we ever used."

Fred Favier, Loose Creek, Mo., says: "I am well satisfied with Dr. Hess Stock Food. I have fed it to cattle and hogs and all improved from the day I started to feed it."

DR. HESS STOCK FOOD

IS A GUARANTEED MILK PRODUCER

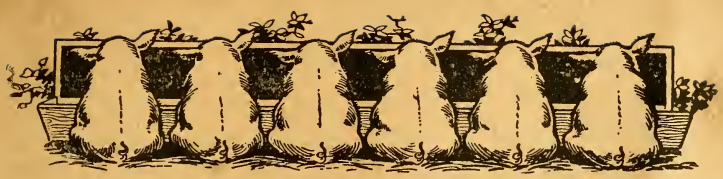


IF you have just one cow, weigh or measure the milk for ten days, then for ten days continue the same ration and add DR. HESS STOCK FOOD as directed; if you don't have a notable increase, sufficient to pay for the STOCK FOOD many times over, your money will be refunded.

Or, if you have a herd, feed DR. HESS STOCK FOOD to every other cow down the line as you have them stationed; otherwise give to all cows exactly the same feed, continue this system of feeding two weeks, measure or weigh the milk of those getting the STOCK FOOD, and those that don't.

These tests will show that a greater quantity of milk is produced from the same ration when DR. HESS STOCK FOOD is fed.

It simply makes the grain and other foods digest properly, allowing nothing to pass off as waste.



How to Keep Them | HOGS | How to Treat Them

In the introduction it has been described how Dr. Hess Stock Food may be used, in connection with Dr. Hess Dip and Disinfectant to advantage in warding off hog cholera.

Aside from this and simply for fattening a hog in the best manner and the quickest, with a less amount of food, Dr. Hess Stock Food will save many times its cost.

It is not simply a food—it is also a tonic.

No farmer should overlook the advantages in actual money-saving profit which will come to him from using Dr. Hess Stock Food regularly and as prescribed.

Indigestion.

Indigestion in pigs results from faulty feeding. The food may be poor in quality, given at irregular intervals, or in too great quantity. To withhold the food for a long time and then allow it in over amount is one of the most fruitful sources of digestive disorders. Large quantities of salt and ashes fed to hogs often causes marked derangement of digestion.

SYMPTOMS: Loss of appetite and refusal of all kinds of food. Sometimes they will squeal for food and rear upon the fence or pen, but will not eat when food is placed within reach. The bowels may become constipated, or the evacuations may be thin. The animal seems to seek unnatural food and will eat stones, dirt, old plaster, rotten wood, in preference to corn.

TREATMENT: The treatment for indigestion consists in limiting the food—that is, do not overfeed. Feed at regular intervals, and give Dr. Hess Stock Food. We can speak with the utmost confidence of this remedy for pigs and hogs. There is no animal that comes under our observation in which this preparation has met with better results or given more universal satisfaction. It is simply a wonder in the development and growth of swine.

Pig Measles.

Cause and source of infection are now settled beyond a doubt to be from the eggs of the Taenia Solium of man, which is eaten by the pig. It has been as conclusively shown that the tapeworm (Taenia Solium) of man comes from further development of the measle in the pig. This tapeworm found in man is a long, flat worm like a tape-measure, and is made up of joints or segments. Each segment of the worm bears male and female organs of generation, and each segment is also loaded with thousands of fertile eggs. These egg-bearing joints become detached from the body of the worm and pass off, new joints are formed and the process is repeated as time goes on, and any number of the segments so detached will not destroy the worm so long as the head remains. The eggs contained in the joints are liberated and no amount of freezing or drying will destroy their vitality. Some of the innumerable quantity of eggs thus deposited findtheir way into the digestive canal of the pig through the manure pit, contaminated pools, or grass to which the ova may adhere, etc. The egg is there hatched and the worm liberated to burrow through the tissue and lodge in the muscles. The habit, in rural districts, of depositing human excrement upon the surface of the ground or in the manure pit, to which the pigs have access, renders it possible for one person having a tape-worm to infect in this way a whole herd of swine; and again, one of the infested herd may, when slaughtered and eaten, infect nearly all who partake of its flesh, unless the parasite is destroyed by cooking.

Measles or Cysticercus in Pork.

Prevention is much more to be relied upon, as will be seen from the foregoing article, than treatment. The history and manner of transmission of the disease as given above will aid in adopting such plans as will prevent infection. The common custom in many districts of allowing or even feeding the pigs upon every manner of filth should be discouraged. Trichinosis, another disease caused by worms in the muscular tissue, the life history of which is the same as the cysticercus, probably comes from the rat, and the flesh of other animals. Disinfect premises frequently with Dr. Hess Dip and Disinfectant.

Paralysis.

Paralysis, (paresis,) or partial paralysis, is met with in hogs.

Symptoms are those of weakness across the back or kidneys, with inability or difficulty in walking. The hind legs appear weak and cannot be controlled by the animal. The animal may drag itself about the pen to secure food.

TREATMENT: Give a physic of two ounces of Epsom salts in gruel or swill. Follow this with ten grain doses of iodide of potash in a little water three times a day. If the hog does not improve in three or four days, give 10 to 15 drop doses of tincture of nux vomica three times a day. Rub the back thoroughly once a day with compound soap liniment. Feed nutritious food, such as oatmeal mush with milk or vegetables. Protect the animal from the heat or sun or from cold rains. This treatment is quite successful when properly carried out. Fowler's solution in teaspoonful doses twice a day for a hog of one hundred pounds is also very successful.

Thumps.

This is a disease found usually in young pigs. It is caused by spasmodic or irregular action of the heart. It results from close confinement and overfeeding. The pig is seen to jerk backward and forward, the heart's action is violent, and striking against the sides of the thorax causes the whole body to shake.

TREATMENT: Cut down the feed and give more exercise. In the early stage give one to two ounces of Epsom salts, or two ounces of castor oil. Follow this with 10 to 20 drops each of tincture of opium and digitalis every two hours until the animal is relieved. If the animal is much exhausted, teaspoonful doses of Hoffman's anodyne with a little cold water every two hours brings relief. Feed only a small amount of milk with oatmeal or middlings added to form gruel.

Half to teaspoonful doses of Fowler's solution once a day is also good treatment.

Swine Plague or Hog Cholera.

These two diseases are caused by different bacteria, but the symptoms and general characteristics are so similar that it is possible only by the aid of the microscope to determine positively which disease or whether both diseases are affecting the herd. Generally swine plague affects the lungs, pluræ and membrane around the heart, while hog cholera is characterized by ulceration of the bowels. Hogs with swine plague frequently show symptoms of lung fever with occasional diarrhœa, while those with hog cholera frequently have diarrhœa with occasional lung complications.

The measures necessary to prevent or treat hog cholera would be even more effective in swine plague. Both diseases are produced by bacteria, which gain access to the blood. The virus of hog cholera is more difficult to destroy, more easily communicated, and more virulent in its effects than that of swine plague. The symptoms of these diseases are very similar. There is first seen signs of fever, shivering, unwilling-

ness to move, loss of appetite, the animal is stupid and dull and hides away in the litter. In a few days diarrhœa sets in, which is persistent and exhausting. The eyes water; later, matter forms. The breathing is more frequent. The skin is often red and congested over the abdomen and inner surface of the legs. Red spots appear, due to rupture of minute vessels. This symptom is quite characteristic of hog cholera. The back becomes arched and the animal grows weak and moves with difficulty.

The fatality of hog cholera and swine plague depends upon the virulence of the contagion, and the susceptibility of the animal in each particular outbreak. If the animals are very susceptible and the contagion very virulent, the loss will be very great, even 90 to 95 per cent. The susceptibility of the animal depends much upon its condition and general health. Any influence or condition that debilitates or retards the development of the vital organs, muscular system or bony structures, must impair the resisting powers of the animal.

The food for pigs and growing hogs should consist of milk, wheat middlings, wheat or oats, crushed peas with clover or other grass, and only a limited amount of corn. Corn alone does not contain the elements necessary for perfect growth, and unless these elements are supplied in some concentrated form the animal cannot resist the poison of cholera. The virulence of the contagion can be greatly reduced by the proper use of disinfectants, which destroy the bacteria and prevent their development. Hogs that have a large range are more liable to contract cholera than those that are more closely confined, for the reason that small animals, or men, coming from infested districts are more apt to gain access to their run than where the animals are more closely confined.

Again, disinfectants cannot be so effectually applied over large areas as where the grounds are limited. It is advisable when there is reason to fear the disease to keep the hogs in small inclosures, which should be kept as clean and dry as possible; disinfect thoroughly at least once a week. New herds brought on the farm should be kept by themselves for five or six weeks and disinfectants used, to avoid risk of comtaminating the home herd. Hogs that have been shipped in cars previously used for this purpose, or have had access to grounds over which hogs have been shipped, should be regarded with suspicion.

Can hog cholera be cured? If so, what is the remedy? We know of no positive cure for every case. With all contagious diseases, prevention is more satisfactory in every way than medical treatment. Every swine grower should use the utmost precaution to prevent the introduction of such plagues

into his herd. Feed your hogs Dr. Hess Stock Food strictly as directed, also disinfect stables and sleeping pens thoroughly. In no condition is the necessity for disinfecting more apparent than around hog yards. Thorough disinfecting with Dr. Hess Dip & Disinfectant will aid greatly in preventing hog diseases.

Piles.

Piles are very frequently seen in pigs closely confined and fed largely on dry feed. It results from constipation or low, weak circulation, due to general debility. The presence of hard fecal matter in the rectum retards the return of blood circulating in the walls of this part of the intestine. The effort necessary to evacuate the bowels also favors the dilatation of the walls of the veins; this continues until the mucous membrane or even part of the bowel itself may protrude.

TREATMENT: The treatment should be directed to removing the cause, and as this is most frequently constipation, laxatives should be given. Soft feed containing some flaxseed meal or an ounce of Glauber's salts should be given. Dr. Hess Stock Food contains just the proper amount of laxatives for these cases, and in addition this food contains the best nerve tonics necessary to tone up the loose, dilated and flabby walls of the bowel, and contribute directly to the cure of the disease.

The following application will be of advantage in reducing the tumor.

Tannic Acid, 3 ss.
Powd. Opium, gr. x.
Vaseline, ℥ i.

Mix. Apply two or three times a day.

Rheumatism.

Rheumatism is not uncommon in hogs. The disease may be known by the difficulty in moving and the disposition to lie in the litter. It results from exposure, dampness and cold.

SYMPTOMS: In severe acute cases the joints swell and are extremely painful, the patient is feverish and the appetite is impaired; the swellings frequently shift from one joint to another. This is characteristic of acute rheumatism of the joints.

TREATMENT: Provide shelter free from moisture and keep the litter clean and dry. In early stages give one to two ounces of Epsom salts dissolved in a little milk or water. If this does not cause copious action of the bowels, repeat in fifteen hours. Two drops of croton oil in a tablespoonful of sweet oil may be given instead of the salts. After this give ten drops of oil of wintergreen in a little sweet oil or raw linseed oil three times a day. In cases less acute ten grains of iodide of potash should be given three times a day, dissolved in a little water.

A dram of powdered cantharides rubbed up with four drams of lard does extremely well as an application to the joints where the swelling is persistent. Dr. Hess Stock Food is also very valuable in preventing this disease, and is a good treatment where laxatives and tonics are required.

Sore Throat or Laryngitis.

Sore throat or laryngitis, which is quite common among pigs, is characterized by cough, difficulty in swallowing, and rough breathing. The breathing sometimes becomes quite laborious and the animal will make a slight, grating noise at each inspiration. The air passages may become closed so as to cause death. The cause of this disease can usually be attributed to sudden changes from heat to cold, ill-ventilated stables, lying in cold, wet stalls, or gaining access to pools while over-heated.

TREATMENT: Give two ounces of castor oil; follow this by giving Dr. Hess Distemper, Fever and Cough Remedy or give ten grains of chlorate of potash and 3 to 5 drops of fluid extract of belladonna dissolved in water three times a day. If the breathing is very difficult, give four grains of tartar emetic and six grains of ipecac in a little gruel. Repeat in half an hour if vomiting does not take place. If the cough is very bad, give 10 to 15 drops of laudanum or a teaspoonful of paregoric three times a day.

Chronic Cough.

Chronic cough may arise from constipation, indigestion, worms, congestion of the liver or irritation of the throat.

A chronic cough arising from the above causes is best treated by a regular course of Dr. Hess Stock Food. This preparation will overcome constipation, improve the digestion, remove intestinal worms and relieve congestion of the liver.

Nervous Cough.

This difficulty is often seen in small pigs and most frequently occurs when first coming from the nest. The cough is often very persistent and spasmodic.

TREATMENT: Feed oatmeal gruel or milk and wheat middlings, with only a small amount of corn, add Dr. Hess Stock Food as directed; also, add a teaspoonful of the following for each pig, three times a day: muriate of ammonia, fluid extract of squill compound, of each two drams; camphor water, add enough to make eight ounces.

Canker of the Nose and Face.

This is a disease of the skin which affects the nose first, but later on spreads over the face, ears and even bunches may form on the body. It is due to a parasite, and as the disease spreads the sores become of a cankerous nature.

SYMPTOMS: There is contraction of the skin with wrinkles across the nose, giving it a stubby appearance, the animal will raise its nose and sniffle, will sometimes run as if making an effort to get away from something; sores break out, the parasites may burrow very deep and cause large, unhealthy, indolent looking wounds, the disease may even be fatal.

TREATMENT: All well animals should be removed to a new pen, and their heads thoroughly rubbed with an ounce of carbolic acid in a pint of raw flaxseed oil. This treatment should also be applied to those recently affected. In later cases, four drams of iodine should be incorporated with eight ounces of vaseline and this applied to the diseased parts; or one part of creolin to six parts of water can also be applied with good effects. If the sores are very indolent and refuse to heal, apply a little butter of antimony with a feather, or twenty grains of nitrate of silver to an ounce of water can be applied in the same way.

Mange.

Mange in the pig is due to a parasite much the same as that which causes it in other animals. The parasite burrows into the skin and forms crusts or scabs; great itchiness prevails and the animal will rub against the posts or partitions and cause the parts to become sore. The disease is easily communicated from one animal to another. It usually appears first on the thin parts of the skin, under the arm or flanks or inside of the thighs.

Sarcopt of Man.

A fecundated female (*A*) forming its gallery or burrow. A semi-diagrammatic figure, partly after Gerlach. From before to behind are seen the eggs increasingly older, *B*, *C*, *E*, then some empty egg-cases, *G*; *F*, opening for the escape of the larva; *D*, excrements.

TREATMENT: All pigs not affected should be removed from the pen where disease prevails, and the woodwork of the pen should be thoroughly washed with a strong solution of carbolic acid; or better, whitewash the pens and add thirty grains of corrosive sublimate to two gallons of the whitewash used. The corrosive sublimate is very poisonous and should be handled with care.

The diseased pigs should be thoroughly washed with soap and water and a brush to break down the burrows of the insect, then sulphur should be well rubbed over the parts. Better still wash in solution Dr. Hess Dip and Disinfectant. This

should be repeated in a day or two; or a very effectual remedy can be made by boiling two ounces of stavacre seeds in three pints of water for an hour, then add sufficient water to make the original quantity. Apply this thoroughly to the skin, rubbing it in completely. Repeat in a week if necessary. An ounce of tobacco leaves steeped in a quart of water for one-half hour will also destroy the parasite, but this is quite poisonous and there is some danger of making the animal sick. If used, it should only be applied to a limited space each day.

Congestion of the Lungs.

This disease is due to a sudden flow of blood to the lungs. It may be the result of over-exertion, as driving on a hot day or to sudden change of temperature, of sudden cold or even heat, or wallowing in cold water while heated.

SYMPTOMS: The animal will sometimes chill, will have an increased number of respirations, the extremities appear cold and the eyes congested; in severe cases there will be a slight watery discharge from the nose tinted with blood, the breathing becomes short and jerky, the lips and gums may become blue, showing great veinous congestion.

TREATMENT: Clothe the body to keep it warm and encourage circulation in the skin by rubbing it. Give the animal Dr. Hess Distemper, Fever and Cough Remedy, or a dram of aromatic spirits of ammonia and a dram of sweet spirits of nitre in a little cold water. Repeat in one half hour if necessary, or a teaspoonful of brandy or whisky can be given in cold water to advantage. If the animal improves, keep up the stimulants for a day or two. Be careful that the pig does not become exposed to sudden changes of temperature. Feed nutritious food, such as milk and gruel.

Pneumonia or Inflammation of the Lungs.

In this disease the lung tissue becomes inflamed; there is also congestion, but it is somewhat less acute than in congestion of the lungs given in previous article. It results from exposure to cold or to sudden variations in temperature. It is also frequently a complication in swine plague. It may be the result of irritating gases or dusts inhaled.

SYMPTOMS: At the beginning there is usually a chill with short breathing, increased number of heart beats, and signs of pain. If the animal is handled it may squeal, especially if the pleura is inflamed. There is a painful, suppressed cough with rise of temperature, the appetite is lost but there is considerable thirst. In very severe cases, there may be a discharge of a frothy mucous from the nose, often tinged with blood.

TREATMENT: If the animal is very fat, good results are obtained from giving one or two ounces of Epsom salts, followed with 2 or 3 drop doses of veratrum viride every 2 or 3 hours. If vomiting ensues, diminish the dose or give 6 to 10 drops of laudanum before giving the veratrum. Dr. Hess Distemper, Fever and Cough Remedy will prove very effective. If the cough is persistent, give teaspoonful doses of paregoric three times a day. Supply the animal with good food, such as milk with middlings or corn meal in the form of gruel. If the animal is much exhausted, 5 to 10 grains of carbonate of ammonia made into solution is often of benefit; or ten grains of muriate of ammonia can be given with a teaspoonful of fluid extract of licorice every 4 to 6 hours. When convalescence begins, give good, nutritious food with Dr. Hess Stock Food as a tonic. This will aid very much in restoring the lost powers and bringing the animal back to its normal, healthy condition.

Diarrhoea.

This disease may arise from feeding undue quantities of food; food that is fermented or unduly sour, or to irritating substances being taken in with the food, musty or decomposed grains or vegetables.

In suckling pigs it is often due to overfeeding the dam, or to sudden changes from poor, innutritious food to liberal supplies of highly nutritious or laxative food, such as flaxseed meal or new corn.

TREATMENT: First ascertain the cause, if possible, and remove it. If due to some irritating substance in the digestive tract, give 1 to 2 ounces of castor oil. After this has operated, give 5 to 10 grains of Dover's powders or a teaspoonful of paregoric. Carefully regulate the diet.

The cause of diarrhoea in suckling pigs should be carefully sought for and removed. If due to some error in feeding the dam, this difficulty should be overcome, and food less succulent and nutritious should be given. Teaspoonful doses of paregoric can be given to the dam three times a day; or ten grains of Dover's powders with ten grains of subnitrate of bismuth will also aid in checking the discharges.

DR. HESS STOCK FOOD

IS THE SCIENTIFIC COMPOUND FOR HOGS.

PIGS when weaned stand a chance of slow development for a time.

Grain or even sour milk is harder to digest than the milk of the dam.

The digestive organs require special aid at weaning time to insure perfect assimilation.

As the feeding period of the hog is short—and the shorter the better—it is expedient to strengthen and build strong every digestive organ while the pig is young.

The rapid development of bone, muscle, and frame work is of the utmost importance, and cannot be formed without the proper elements which enter into their composition.

For their construction a diversified diet is required.

DR. HESS STOCK FOOD

supplies a balanced ration.

It also contains the very essential nerve and digestive tonics.

It enables the hog to stand crowding at all times, and the quicker a hog can be made fat, the less food is required, the least expense, the most profit.

We guaranteed no paralysis where

DR. HESS STOCK FOOD IS FED.

As a flesh producer it is unequalled. With this food hogs thrive in a surprising manner.

One hundred hogs can be fed Dr. Hess Stock Food at a cost of less than 12½ cents per feed. Here is an experiment that will immediately convince any doubting Thomas: Feed Dr Hess Stock Food to half the hogs; do not feed it to the other half; when you come to sell, keep the returns separate and compare. Any stock raiser who ever tries this will always feed all his hogs on Dr. Hess Stock Food ever afterwards.

FOR BROOD SOWS

DR. HESS STOCK FOOD is an excellent tonic and insures vigorous, healthy offspring. It increases the flow of milk and improves digestion.

DR. HESS WORM POWDER

Expels worms so common to hogs. Worms, perhaps destroy more hogs than all other diseases combined. Many cases of so-called hog cholera are worms.

DR. HESS WORM POWDER removes these parasites.

It prevents hog cholera. Feed your hogs **DR. HESS STOCK FOOD** regularly as directed, and dust the bedding and feeding places once a week with

INSTANT LOUSE KILLER;

if your hogs die from cholera we will refund your money.

Hog cholera, as a rule, prevails in the great corn belts. In the Eastern States where hogs are fed a well balanced ration, such as middlings, bran, oats, peas, beans, barley, etc., cholera is almost unknown. Corn lacks the nutritive elements which the system of the hog demands. Hogs fed exclusively on corn are more susceptible to disease.

DR. HESS STOCK FOOD

Supplies the missing elements in the most digestible form; it also keeps the system in the pink of condition, and calls into healthy action every organ of the animal body. Then by the use of

INSTANT LOUSE KILLER

you can destroy the cholera bacilli that lurks in the bedding and feeding places. In this way these two scientific preparations ward off disease. An ounce of prevention is worth more than all the cures, particularly when cholera lurks around.

T. J. Loar, Iowa, says: "Nearly 2,000 head of hogs are thriving and doing wel around here on DR. HESS STOCK FOOD and disinfecting with INSTANT LOUSE KILLER."

Thousands of hog raisers are now using these two preparations with perfect success. You cannot afford to be without them, they are backed by a guarantee that is a guarantee.

As to our responsibility, we refer you to any bank or commercial agency.

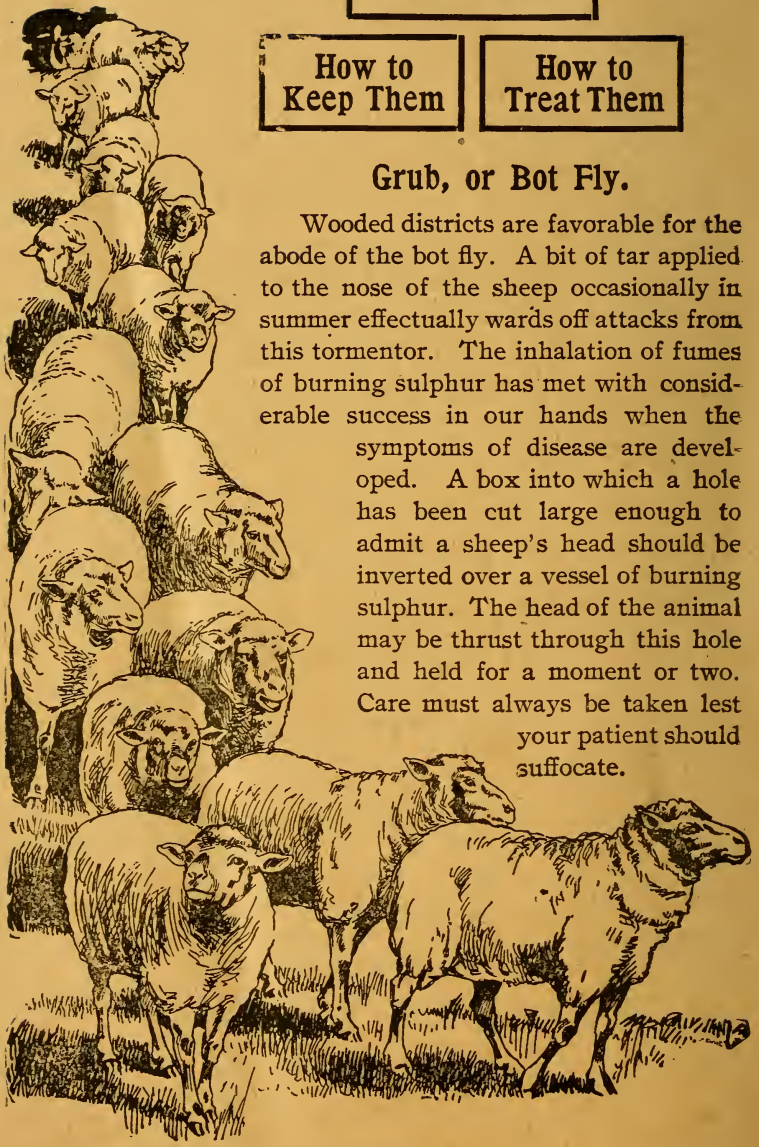
SHEEP

How to Keep Them

How to Treat Them

Grub, or Bot Fly.

Wooded districts are favorable for the abode of the bot fly. A bit of tar applied to the nose of the sheep occasionally in summer effectually wards off attacks from this tormentor. The inhalation of fumes of burning sulphur has met with considerable success in our hands when the symptoms of disease are developed. A box into which a hole has been cut large enough to admit a sheep's head should be inverted over a vessel of burning sulphur. The head of the animal may be thrust through this hole and held for a moment or two. Care must always be taken lest your patient should suffocate.



Worms in the Lungs.

Worms in the lungs and other tissues are found to infest sheep. We will only notice one of these (strongylus Falaria). This is a thread-like worm from one to two inches long, white or yellowish white, and about the diameter of coarse thread. It infests the lungs, bowels and other tissues. It is most common in lambs that have to run on low lands or on fields long kept for sheep grazing.

SYMPTOMS: Loss of flesh, the animal becomes weak, the mucous membrane pale; the appetite usually remains good. The animal may become so debilitated as to be unable to walk.

The treatment should be the same as that suggested under stomach worms.

PREVENTION: Much can be done to prevent the disease resulting from these parasites. Land that has been used for grazing for a number of years may be a source of infection and should be regarded with suspicion. Lands that overflow may become dangerous from having the eggs deposited from lands above.

Sheep kept strong, robust and hearty by Dr. Hess Stock Food will remain strong and able to resist the action and depressing effects of these parasites in a great number of cases. When you begin to feed your sheep for market, add the proper quantity of Dr. Hess' Stock Food to the regular feed and you will be very highly gratified with the results.

Stomach Worms.

Stomach worms, or strongylus contortus, in sheep are small, thread-like worms that infest the fourth stomach and upper portions of the bowels of sheep. They are extremely numerous and cause great loss in some districts.

SYMPTOMS: Loss of flesh, anaemia, weakness, diarrhoea with great prostration of strength; death may result.

TREATMENT: The treatment which has been quite successful is as follows: Steep a gallon of flaxseed in three gallons of water for two hours, strain through cheese-cloth and, while warm, use the tea as follows: Take three or four ounces of the tea, place in a bottle and add to this a tablespoonful of common gasoline, then place your thumb over the mouth of the bottle and shake vigorously; quickly pour this down the sheep's throat The sheep should be held in position by an attendant by placing the animal on its rump and place its nose so that it forms nearly a straight line with the back. Care should be taken that the head be not carried too far back, or danger from strangulation would result. A tablespoonful of gasoline is the proper dose for a sheep or lamb weighing 80 pounds. Lambs requiring treatment should be penned up in the evening and

allowed no food until two hours after treatment, which is to be given at noon next day. They may then be turned out to grass and again brought in at night and the treatment repeated in the same manner each day for three successive days. This treatment is almost free from danger when properly given and is quite effective. Lambs suffering from lung worms should be treated in the same way. Sheep and lambs so treated should be turned into new pastures, lest they again become infested with these parasites. Dr. Hess Worm Powder is effective in expelling and preventing stomach worms.

Scab or Mange.

Scab or Mange is a Parasitic Disease found in Sheep.

Treatment consists in removing to a new run all those not affected. Do not move the diseased sheep and allow the others to remain, as the grounds are infected and disease will follow and you will start disease in a new locality.

Dr. Hess Dip and Disinfectant.

One part to 70 parts of water will destroy scab, mange and also kill the ticks. It is standardized by chemical tests of the raw material so that the preparation will always prove uniform. It is free from any poisonous or irritating qualities and will not injure the fleece. It is inexpensive and not only relieves the above conditions, but is the greatest disinfectant known.

Ticks.

These insects may grow to one-fourth of an inch in length, have brown or reddish-brown bodies. The feet are hooked and the rostrum is provided with a sucker. They have been known to live in the fleece for more than a year after shearing.

Sheep Tick.

Foot Rot.

Foot Rot is a contagious disease affecting the feet of sheep.

TREATMENT: Avoid pastures or runs that are contaminated. Remove all diseased or detached portions of the claw. Apply butter of antimony well to the diseased parts with a swab or feather. Dr. Hess Dip and Disinfectant, one part to 25 of water placed in a shallow trough and animals allowed to walk through it to and from pasture, will cure and prevent this difficulty.

Colic.

This disease results from derangements of digestion, and is the consequence of taking too great quantities of indigestible food.

Diarrhoea.

This frequently occurs in the sheep, especially as a result of stomach worms, or it may be the result of sudden change of food, such as from dry food to succulent green pastures, or from eating undue quantities of vegetables or roots. In lambs it may be the result of undue quantities of milk, or from sudden changes of the food of the ewe.

TREATMENT: If stomach worms are suspected, give treatment prescribed to remove these parasites; see page 79.

If due to some irritating substances a dose of 2 to 4 ounces of Epsom salts should be given to clean out the bowels, followed by dram doses of prepared chalk with ten grains of subnitrate of bismuth three times a day, or paregoric in teaspoonful doses in one-half ounce of camphor water does excellently.

Mammitis or Inflammation of the Udder.

This frequently occurs in ewes, especially if allowed succulent food or green pasture at lambing time. It may be the result of an undue yield of milk, or to direct injury.

TREATMENT: If the bowels are constipated, give from 2 to 4 ounces of Epsom salts. If, however, the animal has had a run of pasture, better change the feed and give only a small amount of dry feed. Bathe the udder with warm water and apply camphorated oil, to each ounce of which has been added one-half dram fluid extract of belladonna. If abscesses form, they should be opened and the pus allowed to escape, and the parts cleansed with a two per cent. solution of carbolic acid.

Poverty of the Blood—Anaemia.

This disease is extremely common in sheep, especially during the latter part of winter and early spring. It frequently

results from improper feed and feeding. It may also be the result of certain parasitic diseases, especially lung worms.

The symptoms and causes are the same as those given under horse, which see, page 27.

TREATMENT: Place in comfortable quarters, supply nutritious diet, such as ground oats, bran or middlings to which add Dr. Hess Stock Food.

Foot and Mouth Disease.

This is a contagious disease which affects all cloven-footed, herbiverous animals. It is shown by ulcers forming about the nose, mouth and lips; the feet also become diseased.

The treatment is the same as that recommended for cattle, on page 58.

Epizootic Ophthalmia, or Inflammation of the Eyes.

This disease sometimes occurs in sheep. No satisfactory explanation has been given as to its exact cause. A similar disease occurs in the ox.

The treatment is the same as for the ox, given on page 59.

Liver Rot or Fluke.

This is a parasitic disease affecting the liver of sheep. The symptoms are those of lung worms, except a cough, which is only occasionally present. The membrane of the nose and eyes becomes soft and flabby, the fluids of the eye are yellow or dark, the skin is pale and bloodless, there is deficiency of oil or yolk in the wool, the muscles waste, the animal is razor backed, and the wool is easily detached.

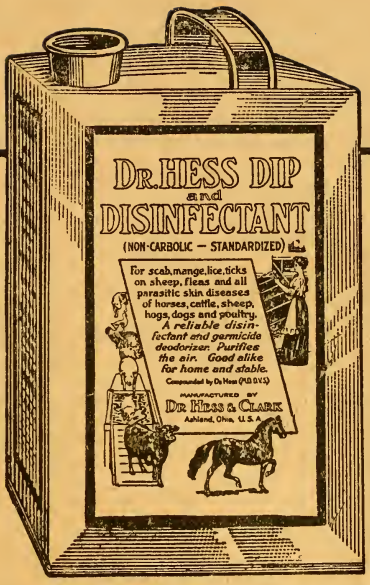
Treat with tonics, such as Dr. Hess Stock Food. No parasiticide can be given which will reach the liver and gall ducts, the location of the parasite.

Change sheep to new pastures, as the old runs may be contaminated. Water only from deep wells or springs, and avoid stagnant pools.

Catarrh,

or inflammation of the mucous membrane of the nose frequently arises from the presence of the larva of the bot fly, or it may be the result of sudden changes of temperature, exposure to cold, or permitting the animal to be out in a soaking rain.

Treat by giving good shelter, avoid sudden changes of temperature. If due to grub, treat by removing grub, as given on a previous page. If due to other causes, give two to four drops of fluid extract of belladonna in one-half ounce of camphor water three times a day. Support with good, nutritious tonics, such as Dr. Hess Stock Food.


DR. HESS DIP
and
DISINFECTANT
(NON-CARBOLIC — STANDARDIZED)
For scab, mange, lice, ticks on sheep, fleas and all parasitic skin diseases of horses, cattle, sheep, hogs, dogs and poultry.
A reliable disinfectant and germicide deodorizer. Purifies the air. Good alike for home and stable.
Commended by Dr. Hess (P.G.D.V.S.)
MANUFACTURED BY
DR. HESS & CLARK
Ashland, Ohio, U.S.A.

Lice and Parasites Cost $175,000,000 a Year

according to the report of the United States Department of Agriculture. What the death loss is, due to poisonous germs of disease, can hardly be estimated.

The cry everywhere is clean up, disinfect, destroy all forms of parasites.

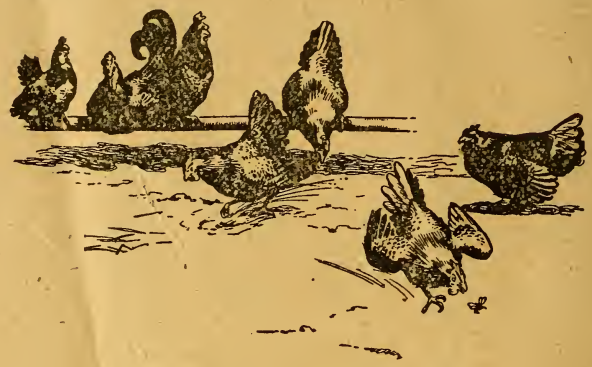
DR. HESS DIP
AND DISINFECTANT

Deodorizes, purifies the air, kills all forms of disease germs in barns, hog pens, cow stables, chicken yards, sinks, drains, etc., simply by sprinkling it everywhere. One gallon diluted makes from 70 to 100 gallons. It also kills lice, mites, ticks, fleas, also sheep scab, mange, eczema and other parasitic skin diseases. Meets the United States Government requirements for official dipping.

If your dealer can't supply you, we will Write for circular.

DR. HESS & CLARK

Ashland, Ohio, U. S. A.



Crop Bound.

This is a disease that arises from taking too much or too coarse food into the crop. It is frequently the result of an abnormal appetite, from deranged digestion, or lack of variety in the food supply.

TREATMENT: As the crop has little to do in the process of digestion except to hold and moisten the food, it should not be overloaded. The desire for unnatural food should be corrected by giving a variety, and a good supply of grit. Oil or tepid water should be poured down the throat and the mass in the crop kneaded gently to aid in breaking it up. A small quantity of soda sulphite dissolved in water will prevent fermentation of the food in the crop. If the bird is valuable and the mass cannot be removed, it may be necessary to cut through and remove the contents. The cut should be high as possible, so that the food taken after, which should be limited for a while, will not escape. The digestive tonics, as gentian, columbo, etc., are liberally supplied in Dr. Hess Poultry Pan-a-ce-a, also the zymocides that will prevent putrefaction and fermentation of the food and the evolution of gas. This preparation will be found of great value in fowls prone to indigestion.

Indigestion.

The trouble is due to irregular feeding, or being feed on one kind of grain too long, dirt, and sour feed with a poor supply of grit. The gizzard is the grinding mill of fowls, and

instinct has taught them to gather and swallow small stones to aid in grinding the food.

TREATMENT: Feed regularly a moderate amount of good, clean grain, give a variety such as cornmeal, wheat middlings, oatmeal and a small amount of lean meat. Mix together and make damp, but never soft or sloppy. To this add Dr. Hess Poultry Pan-a-ce-a as directed, and give for the morning feed. The evening feed should consist of whole grain, and should be thrown among leaves, chaff, straw or other litter to compel them to exercise to obtain it. Two feeds a day are enough for old fowls. Always provide the birds with a good supply of sharp grit.

Diarrhoea.

Diarrhoea in fowls is a symptom of intestinal worms, cholera, indigestion, lice, congestion of the liver, over-feeding, and possibly some other conditions.

TREATMENT: Seek the cause and remove it if possible. A feed of cornmeal and middlings, or oatmeal, made damp with a tea made from boiling white oak bark, or blackberry roots, will usually allay the trouble. Camphor water may be used the same way. A dram of powdered nutgalls may be given to fifty chickens in the feed. A tablespoonful of Douglas' mixture should be added to the drinking water for twenty-five fowls, every day or every other day. Douglas' mixture is made by adding one pound of copperas to two gallons of water. After this is dissolved add one ounce of sulphuric acid. Mix, and when this settles pour off the liquid and it is ready for use. It should be made in a wooden or earthen vessel. Dr. Hess Poultry Pan-a-ce-a is also extremely valuable in overcoming diarrhoea, especially when it arises from indigestion.

Scabies.

Scabies of the legs occurs as a parasitic disease in the fowl, and is commonly known as scaly legs.

TREATMENT: Oils and fats are not entirely without danger when applied to poultry, especially to young fowls. The feet should be cleaned as well as possible, and the scabs removed after soaking in tepid water. When dry apply balsam of peru and repeat in a day or two. The run should be sprinkled over with Instant Louse Killer. The disease is not difficult to cure, and is not so apt to spread as some other forms of itch.

Depluming.

Depluming scabbies, or a form of itch, is found in poultry; it selects the body of the fowl for its abode. It does not burrow into the skin, but lives upon the feathers and epidermis.

TREATMENT: As this is an extremely contagious disease, the healthy fowls should be placed in a separate run and Instant Louse Killer dusted into the feathers, if any remain, on the diseased bird. Dust the pen, roost and everything thoroughly. Treat new cases at once, if any arise. Ointments or balsams, as that of peru, are effectual, but they are very difficult to apply. Instant Louse Killer can be dusted into the feathers when the disease first appears.

Favus.

Favus is a parasitic disease in fowls. The favus generally begins on the comb, crest or wattles—shown by gray or white, round or irregular spots, separated at first, but extend, multiply and become confluent or joined together, forming a thin, whitish covering over the diseased surface. The crusts gradually become thicker, and in a few weeks form white dandruff-like scales; beneath these scales the skin looks excoriated and tender. From those parts first affected, and not covered with feathers, the disease spreads to the neck and other parts of the body and the feathers drop out. The cut shows a fowl suffering from favus.

Head and Neck of a Fowl Affected with Generalized Favus.

TREATMENT: Wash the diseased parts in a solution of one part Dr. Hess Dip and Disinfectant to 75 parts of water which will kill the fungi. A ten per cent. solution of nitrate of silver will destroy the parasite, but it turns everything black and looks bad. It should be applied with a brush. A very sure and perfectly harmless remedy is a saturated solution of sulphite or hyposulphite of soda applied well over the parts; this will destroy the fungi and be free from danger of poison.

Feather Eating.

Feather eating is a vice found most frequently in fowls closely housed.

TREATMENT: Remove the offending bird and watch for new cases. Aloes made into a paste and applied to the feathers of the neck will sometimes disgust the offender. Better to chop the head off unless the bird is especially valuable.

Gapes.

Gapes is a parasitic disease affecting young fowls. The worm which causes the disease is developed from the egg of its own kind, which contains the embryo of this parasite.

The gape-worm attaches to the inner surface of the windpipe. The older methods of removing the worm with a small wire, twisted horse-hair or denuded timothy head or by dropping some liquid, supposed to cause the worm to relinquish its hold, into the trachea is not only attended with danger even in the hands of a skilled operator, but is too tedious and unsatisfactory to receive general favor. Dr. Hess Poultry Pan-a-ce-a is a safe, convenient and thoroughly effective remedy. It never fails to give most excellent results when given to young fowls early and regularly. If Dr. Hess Poultry Pan-a-ce-a is given regularly once a day after the fowl are one week old there will be no loss from gapes. Its action is through the blood, from whence the worm gains its nutrition by drawing from the delicate lining of the trachea. Disinfect the premises with Dr. Hess Dip and Disinfectant.

Gape-Worm.

Cholera.

Cholera in fowls is an acute infectious disease, endemic or epidemic, characterized by copious watery dejections and great prostration in strength.

SYMPTOMS: The first indication of disease may be shown by the bird appearing slow and indifferent, remaining alone, half asleep, with the feathers of the neck standing up and the wings drooping. As the disease advances these symptoms are more marked, great weakness supervenes; the eyes are closed and the head resting upon the ground, motion difficult and unsteady. The head is pale or bluish white; the excretions, which in health are white, are tinged with yellow. This symptom of yellowish of the urates (that part of the excrement which is thrown off by the kidneys) is pecular to this disease.

CAUSES: This disease may arise spontaneously by filth and poor ventilation, over-crowding or other debilitating causes which render the fowls very susceptible or less able to resist the poisonous germs of infection, but by far the most frequent cause is by contagion or by coming in contact or taking the poison directly into the body. It has been quite conclusively demonstrated that the germs of cholera are not volatile and birds close to an infected pen will remain healthy for months if no solid substance to which the diseased germs can adhere are conveyed to the healthy fowls.

PREVENTION AND CURE: Heat destroys the cholera germ. If the food or drink be boiled or heated to boiling point, and fed from vessels cleansed with boiling water, it will remove this source of infection. The birds should be fed through a

slatted partition, as their feet may be a source of infection. All healthy birds should be removed from the infected pen. (Do not remove sick birds, as the pen is already infected.) Remove all the droppings or other filth. Sprinkle every part of the pen with Instant Louse Killer and do it well. Repeat every three or four days.

Give the sick birds Dr. Hess Poultry Pan-a-ce-a regularly as directed. Give those not affected the Pan-a-ce-a as a preventive.

Coops and rooms should be thoroughly disinfected with Dr. Hess Dip and Disinfectant.

Simple Catarrh.

This is a simple inflammation of the mucous membranes of the nose, eyes and the ducts leading from the eyes to nostrils. The mouth, larynx, pharynx, and upper portions of trachea (windpipe) may also be the seat of catarrh. In catarrh the discharge is slight, watery and does not emit much, if any, odor. Catarrh arises from exposure to cold, and wet, to filthy runs, etc.

The treatment of catarrh is simple and consists first in removing the cause, such as exposure to cold draughts, wet run, want of cleanliness, etc., giving the birds a clean, light dry run, treating them with tonics in warm food. As a tonic with the morning feed nothing equals Dr. Hess Poultry Pan-a-ce-a. In fact, this remedy is all that is required, where care of the flock as suggested above has been observed. When the discharge from the inflamed mucous membrane becomes thick, purulent and fetid, the disease is then known as

Roup.

Roup results from close air, extreme variations in temperature between day and night, or sudden changes as cold waves damp houses, draughts of cold air striking the birds, especially while on the roost, etc.; associating with birds already affected, improper food and filthy water, over-crowding, filth or other influences that tend to lower the vitality of the fowl.

The introduction of a diseased bird or one that has apparently recovered from disease will often be the cause of many new cases in the run. Purulent discharges dropping from the nostrils of a diseased bird into the feeding trough or drinking vessel may be the direct cause of the canker mouth and throat.

Birds that have suffered from a severe attack of roup should not be kept for breeding stock, as their chicks are almost sure to be delicate and develop roup upon the slightest exposure.

SYMPTOMS: The first symptoms of roup may be a slight drowsiness, diminished appetite, redness of the mucous membranes with a watery discharge from the nostrils. which soon

becomes thick and yellow in color, bubbles appear in the corners of the eyes and the nasal discharge dries around the orifices, closing them. The bird will sneeze and shake its head in its effort to dislodge the offending matter. The eyes become swollen and cheesy masses appear beneath the lids, cankerous sores appear in the mouth and throat; if the mucous membrane of the throat becomes much inflamed the breathing becomes difficult and the bird makes a wheezing noise, especially while on the roost. If the swelling is very bad or the nostrils become pasted shut, the bird will keep the mouth open to obtain air. Nodules often form upon the comb, about the eyes or even upon the tongue. These large warty growths entirely close the eyes, or when situated upon the tongue prevent the bird from taking food. In severe cases of roup the discharge becomes yellow and very offensive, the whole head seems to be filled with pus of the most offensive character, the bird is unable to eat, becomes weak and soon dies.

TREATMENT: The fowls should be given the very best surroundings before any treatment is attempted. It is useless to make local applications or give remedies internally, so long as the birds are housed in a damp run, are exposed to draughts of cold air, or compelled to eat food or drink water that has received the discharges from diseased birds, or while the birds are over-crowded or kept in a filthy place. Provide a clean, dry, well-lighted place for diseased birds. Disinfect the run by using Instant Louse Killer freely. This destroys the poison of disease, and, being in powder form, does not cause the dampness so objectionable in liquid disinfectants. Scald out the drinking vessels and feeding troughs every day.

For mild cases good care with Dr. Hess Poultry Pan-a-ce-a in the morning feed will be all that is necessary to effect a cure. The Pan-a-ce-a is an excellent tonic, besides having special properties which counteract the poison of roup. It should be given regularly to all birds affected with this disease. As a local application equal parts of peroxide of hydrogen and water applied with a soft brush or injected into the nostrils with a small syringe is good treatment; an ounce of creolin dissolved in four ounces of water may be used the same way with good results. A dram of powdered blue stone dissolved in two ounces of water makes a splendid application for indolent canker sores. It should be applied with a camel's hair brush to the sores only. If diluted with eight times the amount of water it makes a good injection for the nostrils, a small amount can also be dropped into the eye if the discharge is profuse.

Nitrate of silver thirty grains to the ounce of water, is a good remedy to apply to the unhealthy or indolent cankers.

This is a very strong solution and should be applied only to the canker. Monsel's solution is also a splendid application for canker sores or unhealthy growths or ulcers about the comb. Two or three grains of sulphate of zinc dissolved in an ounce of water is excellent for those cases in which the eyes are badly swollen and the discharge is profuse. A drop or two should be put into the eye twice a day with a dropper.

For severe cases, characterized by enlarged head, canker in the mouth, very disagreeable discharge from the eyes and nostrils, the following treatment is probably the best and most satisfactory that can be employed. Take a bucket nearly full of warm water, pour on top of the water three or four ounces of kerosene oil. The oil will remain on top of the water. Take the diseased bird by the bead and legs and dip the head into the oil so that the eyes are covered, hold a few seconds, take the head and wipe dry; do not be too slow in taking out the bird or in wiping the head dry or the feathers will come out. It is seldom necessary to repeat the application, and where good care is observed with tonics, such as Dr. Hess Poultry Pan-a-ce-a, given internally, almost every bird so treated will make a speedy recovery. Disinfect everywhere with Dr. Hess Dip and Disinfectant; put a few drops in the drinking water.

Lice.

There is little doubt but that the many cases of so-called cholera among fowls is not cholera at all, but some other and unrecognized disease, or their real trouble may be found in not a few cases directly traceable to lice.

A case in point is that of a farmer who insisted that his fowls died of cholera, and that cholera was always caused by or accompanied by lice, and that a line of treatment directed against lice always brought great improvement in his cholera patients. No doubt the myraids of lice that infested his birds were the true cause of the trouble. When your chicks or turkeys become weak, sick and debilitated, refuse to eat, sit around with eyes half closed, feathers ruffled, wings drooping, or they have diarrhoea, and keep up a plaintive cry look out for the large gray head-lice, a single one of which will kill a chick or young turkey. Lice will kill fowls almost as rapidly and surely as cholera, and while we do not recommend our

Poultry Pan-a-ce-a as a preventive or a destroyer of these parasites, it will be found of the greatest utility in toning up the fowls, while other means may be directed to the destruction of lice.

INSTANT LOUSE KILLER will destroy these pests at once, and is lasting, cheap and easily applied. The small mite which infests the roosts and pen and visits the birds at night is not much less annoying to the fowls, although less dangerous to life. They leave the bird to hide in the cracks or filth of the pen and attack the fowl when opportunity affords. The large gray louse never leaves the fowl except by accident.

There are many varieties of different lice that infest the domestic fowls. The rapid development and multiplication of these insects is most wonderful, thousands developing from a single pair in the course of a few weeks. Filth, heat and dry weather favor the development and propagation of these parasites. No disease of domestic fowls is so persistent, destructive and difficult to completely remove as phthiriasis (lousiness). It is only by persistent efforts and continued warfare against these parasites that they can be kept in subjection. Instant Louse Killer is the very best article so far found to destroy these pests, and its effects are largely due to its power to cleanse and destroy putrefactive matter. It is non-poisonous to higher forms of animal life, but speedily destroys low animal organisms.

Apoplexy.

This disease occurs among fowls that are very fat. The heavier breeds are most prone to suffer. The attack is sudden, no previous illness being shown. Fowls suffering from apoplexy often drop from the perch dead, are found dead on the nest, or from some slight exertion expire.

TREATMENT: Cut down the amount of food, especially fat forming food such as corn, and compel birds to take exercise. Laxatives also are of advantage. A dram of sulphate of soda dissolved in a small amount of water, and used to moisten the food for twenty to thirty chickens acts nicely as a laxative.

Leg Weakness.

Leg weakness is the name commonly applied to a condition in fowls, characterized by an irregular, weak, uncertain motion when the bird attempts to move. All degrees and stages of disease may occur, even from a slight irregularity or uncertainty in the step when the bird attempts to walk, to total inability to progress, and even to stand is a feat beyond the strength of the bird. Sometimes the fowl will attempt to walk, but suddenly tilt forward or backward and extend its

wings to aid in preserving its equilibrium. The appetite very often remains good, and the fowl will greedily swallow any food that happens to come within its reach, or will even make an effort to reach food in sight.

CAUSE: The cause of this disease is no doubt largely due to improper food or to the want of proper digestion and assimilation of the food taken. Young birds of the larger and heavier breeds, whose growth is very rapid, are most frequently affected, but this rule is not without exceptions.

It is an admitted fact by physiologists that certain kinds of food go to repair the tissue and the formation of muscular fibre, while another class supplies heat for the body and formation of fat. If these foods are not each supplied to meet the special requirements the bird must suffer to that extent. During the growth of bone, muscular tissue and feathers, a great quantity of food rich in nitrogen and the mineral salts so necessary for the growth of bone is required. In the mammalia, or those animals which suckle their young, no food is so nutritious or so well adapted to the growth of the offspring as the milk of the dam. Cow's milk is found to be rich in the salts of potash, soda, calcium, iron and others, also to contain casein, albumin and other nitrogenous bodies which go to the construction of muscular tissue. Sugars, starches and fats, when fed alone or to the exclusion of such articles as lean meat, milk, blood, eggs, beans and other nitrogenous materials, form too much fat without material for muscle and bone, and this, no doubt, is the cause in many cases of the disease under discussion. A great variety of food should be given, and raw, lean meat and milk should not be overlooked. Dr. Hess Poultry Pan-a-ce-a will be of the greatest benefit in these cases, as it contains those salts of iron, potassium, soda and the bitter tonics, in the most easily digested form and will supply the salts so necessary for the rapid and well balanced growth of the young fowl, yet so frequently absent or supplied in very much too small quantities in the food.

Worms in the Intestines of Fowls.

There are no less than ten different kinds of tape-worms described and found in the domestic fowl. Besides these there are numerous round worms that are of no importance, as far as they are associated with disease. The most common tape-worm of the fowl is from one to ten inches long, or even longer, and one twenty-fifth to one-tenth of an inch wide. They are segmented or jointed, the same as those found in man. They are all provided with small hooklets by which they fasten to the lining of the bowels. They have no alimentary canal or

passage-way for food, but each joint is provided with sexual organs and loaded with eggs; these joints become detached from the head of the worm and may be found in the droppings of the fowl.

Fowls that bear numerous tape-worms lose their appetite, become poor in flesh, dull and feeble, wander off alone, and sit with the head under the wing with the feathers standing out. Diarrhoea, with dizziness and stiffness of the legs have been noticed.

TREATMENT: The worms may be removed by giving the fowls a teaspoonful of powdered pomegranate root, for every fifty chickens, in their food. Or a dram of powdered Areca nut should be given in the food for thirty fowls. Powdered male fern may be given in the same dose and manner as Areca nut. The drug that is selected should be given after a period of ten hours' fasting, or give Dr. Hess Worm Powder as directed. The following morning, a soft feed should be given, and a few ounces of Glauber salts should be dissolved in the water used to mix the food.

Canker.

Canker may develop from a cold. They appear as indolent sores about the mouth and mucous membrane.

TREATMENT: If white, cheesy substances are present remove carefully and apply, with a swab or brush, Monsel's Solution. A few applications will overcome the disease.

Moulting.

At the moulting season poultry requires extra care. The requirements necessary for the growth of feathers tax the digestive and assimilative powers to their utmost. Foods rich in nitrogenous materials are especially useful, and Dr. Hess Poultry Pan-a-ce-a will be of very great advantage. Its use should begin early and continue regularly through the season.

Diphtheria.

This is a disease characterized by great prostration of strength; the feathers are ruffled, birds appear sleepy, the neck appears stiff, there is fever with discharges from the nostrils and sticky fluid from the mouth, the larynx or top of the windpipe is swollen and has a red, inflamed appearance; later on they become purple and discharge a thick, fetid pus, a tough membrane may form adhering to the walls of the throat. As this membrane becomes thickened, it may entirely close the larynx, and cause death by suffocation. It is frequently associated with paralysis or loss of motion.

TREATMENT: Place the bird in a warm and even temperature. Dust sulphite of calcium over the diseased part of the throat two or three times a day; or equal parts of boracic acid

and powdered hydrastis can be dusted into the throat three times a day to advantage.

If cankers appear within the throat, touch with a solution of ten grains of nitrate of silver to an ounce of water. Give gruels, such as raw eggs with beef tea, followed with tonics, or syrup of hypo-phosphites is an excellent article in the later stages. This should be followed with a long continued course of Dr. Hess Poultry Pan-a-ce-a.

Mites.

Mites are small lice which lodge in the crevices and cracks of the pen during the day and attack the fowls while on the roost at night. They are extremely annoying and difficult to destroy. They can be completly eradicated from the premises by the use of Instant Louse Killer strictly as directed.

Blackhead in Turkeys.

Blackhead is a malignant, contagious disease of turkeys. It is called blackhead because the heads of those affected usually turn yellow or black, but this is only a symptom, as the true seat of the disease is in the liver and intestines.

Ulcerated Bowel.

The lining or mucous membrane of the intestines, especially the pronged blind portion of the bowels, is ulcerated and thickened, as shown in cut, the liver contains numerous abscesses and is mottled and broken down. The bird becomes infected early in life, and is then capable of transmitting the disease by means of the discharges to other fowls feeding from the same run.

SYMPTOMS: The fowls have a sleeply, dejected look, the heads turn yellow or black, the droppings are thin and yellow, the appetite is lost, the fowls are quite thirsty, become very poor, and usually succumb in 4 to 6 days. The disease is most prevalent in the latter part of July or August and at the beginning of cold weather in the Fall.

TREATMENT: Turkeys should be given a tablespoonful of Dr. Hess Poultry Pan-a-ce-a once a day to every 15 or 20, mixed with ground feed in the morning, and add only sufficient water to make it thick and crumbly. Feed from scalded troughs. Pan-a-ce-a will not cure in every case, but it will do much to the retard progress of disease and improve the condition of the fowl.

If blackhead is known to be present all the droppings should be carefully collected and burned, birds should be changed to a new run and roosts, sprinkle with Dr. Hess Dip and Disinfectant. Drinking vessels and feeding troughs should be scalded out frequently.

DR. HESS POULTRY PAN-A-CE-A PAYS THE GROCERY BILLS

There is absolute certainty about the result of feeding Dr. Hess Poultry Pan-a-ce-a; it is simply another illustration of cause and effect. Dr. Hess (M. D., D. V. S.) has studied the egg making process and we submit this poultry book as evidence of his ability to formulate a poultry preparation that he can positively guarantee to make hens lay.

767 Eggs from 37 Hens.

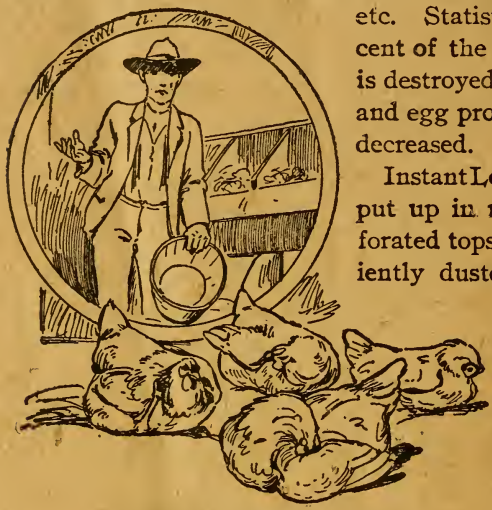
JOHN W. TINSON, 47 Main St., So. Weymouth, Mass., says: "I fed Dr. Hess Poultry Pan-a-ce-a to 40 young pullets that commenced to lay in November, did not make any account of them until December 1st. Commenced to feed in December and got 152 eggs. In January got 371 eggs; February, the month that I thought they would lay the best, I did not feed any Pan-a-ce-a, and got 329 eggs. The 1st of March commenced to give Poultry Pan-a-ce-a and got in this month 767 eggs from 37 hens. I am satisfied it pays to use Dr. Hess Poultry Pan-a-ce-a."

SOLD ON A WRITTEN GUARANTEE.

Manufactured by DR. HESS & CLARK, Ashland, Ohio.

INSTANT LOUSE KILLER KILLS LICE

Instant Louse Killer is guaranteed to destroy lice on poultry, stock of all kinds, ticks on sheep, bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. Statistics prove that 50 per cent of the yearly poultry hatch is destroyed by diseases and lice, and egg production is materially decreased.



NO TIME TO LAY
when fighting lice.

Instant Louse Killer is a powder put up in round cans with perforated tops, and can be conveniently dusted on setting hens, nests, roosts and about the poultry house. It is also a disinfectant and deodorizer, therefore, destroys the germs of disease and keeps poultry houses healthy.

No poultry raiser that once tests the merits of this scientific preparation, for five times its cost, would ever again be without it.

Your dealer will supply you with Instant Louse Killer with the understanding that if it doesn't give entire satisfaction in every particular your money is to be refunded.

J. J. MORIARTY, Greenville, Iowa, says: "I have used Instant Louse Killer for lice on horses, cattle, etc., and have also used it for bugs on cucumber vines, cabbage, etc., and will say I have never had a failure from it, and can conscientiously recommend it."

SOLD ON A WRITTEN GUARANTEE.

Manufactured by DR. HESS & CLARK, Ashland, Ohio.